# **OPERATION AND PARTS MANUAL**



# MODEL MS-70 PLASTER AND MORTAR MIXER (GASOLINE ENGINE/ELECTRIC MOTOR)

Revision #3 (03/26/10)

THIS MANUAL <u>MUST</u> ACCOMPANY THE EQUIPMENT AT ALL TIMES.



### **CALIFORNIA** — Proposition 65 Warning

Engine exhaust and some of its constituents, and some dust created by power sanding, sawing, grinding, drilling and other construction activities contains chemicals known to the State of California to cause cancer, birth defects and other reproductive harm. Some examples of these chemicals are:

- Lead from lead-based paints.
- Crystalline silica from bricks.
- Cement and other masonry products.
- Arsenic and chromium from chemically treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: <u>ALWAYS</u> work in a well ventilated area, and work with approved safety equipment, such as dust masks that are specially designed to filter out microscopic particles.

# **HERE'S HOW TO GET HELP**

# PLEASE HAVE THE MODEL AND SERIAL NUMBER ON-HANDWHEN CALLING

#### STOW MAIN OFFICE

Post Office Box 6254 888-252-STOW Carson, Ca 90749 *FAX*:310-537-1986

Email: stow@multiquip.com Internet: www.stowmfg.com

### PARTS DEPARTMENT

800-427-1244 FAX: 800-672-7877 310-537-3700 FAX: 310-637-3284

SERVICE DEPARTMENT

800-421-1244 FAX: 310-537-4259

310-537-3700

TECHNICAL ASSISTANCE

800-478-1244 FAX:310-631-5032

**WARRANTY DEPARTMENT** 

800-421-1244, EXT. 279 FAX: 310-537-1173

*310-537-3700, EXT. 279* 

SALES DEPARTMENT

310-661-4242 FAX:310-604-9237

877-289-7869 (877-BUY-STOW)

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This manual <u>MUST</u> accompany the equipment at all times. This manual is considered a permanent part of the equipment and should remain with the unit if resold.

The information and specifications included in this publication were in effect at the time of approval for printing. Illustrations are based on the *MS-70 Plaster/Mortar Mixer*. STOW Construction Equipment reserves the right to discontinue or change specifications, design or the information published in this publication at any time without notice and without incurring any obligations.

To find the latest revision of this publication, visit our website at: www.stowmfq.com



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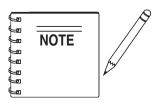
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Specifications and are subject to change without notice.

### STOW MS-70 MIXER — PARTS ORDERING PROCEDURES

### When ordering parts, please supply the following information:

- □ Dealer account number
- Dealer name and address
- Shipping address (if different than billing address)
- □ Return fax number
- ☐ Applicable model number
- Quantity, part number and description of each part
- ☐ Specify preferred method of shipment:
  - ✓ FedEx or UPS Ground
  - ✓ FedEx or UPS Second Day or Third Day
  - ✓ FedEx or UPS Next Day
  - ✓ Federal Express Priority One
  - ✓ DHL
  - ✓ Truck

Note: Unless otherwise indicated by customer, all orders are treated as "Standard Orders", and will ship within 24 hours. We will make every effort to ship "Air Shipments" the same day that the order is received, if prior to 2PM west coast time. "Stock Orders" must be so noted on fax or web forms.



### Here's how to get help...

Please have the model and serial number on hand when calling.

#### STOW MAIN OFFICE

18910 Wilmington Ave. 800-421-1244 Carson, CA 90746 FAX: 310-537-3927

Email: stow@stowmfq.com Internet: www.stowmfg.com

#### SALES DEPARTMENT

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#### TECHNICAL ASSISTANCE

800-478-1244 FAX: 310-631-5032

#### WARRANTY DEPARTMENT

800-421-1244, EXT. 279 FAX: 310-537-1173

310-537-3700, EXT. 279

### Place Your Parts Order Via Web or Fax For Even More Savings!

(Domestic USA Dealers Only)

### Extra Discounts!

All parts orders which include complete part numbers and are received by our automated web parts order system, or by fax qualify for the following extra discounts:

| Ordered<br>via | Standard orders | Stock orders<br>(\$750 list and above) |
|----------------|-----------------|--|
| Fax            | 3%              | 10%                                    |
| Web            | 5%              | 10%                                    |

### Special freight allowances when you order 10 or more line items via Web or Fax! \*\*

FedEx Ground Service at no charge for freight No other allowances on freight shipped by any other

carrier.

\*\*Common nuts, bolts and washers (all items under \$1.00 list price) do not count towards the 10+ line items.

NOTE: DISCOUNTS ARE SUBJECT TO CHANGE



STOW CONSTRUCTION EQUIPMENT

A DIVISION OF MULTIQUIP INC. POST OFFICE BOX 6254 888-252-STOW[888-252-7869] FAX: 310-537-1986 E-MAIL: stow@multiquip.com

CARSON, CA 90749 310-537-3700 FAX: 800-556-1986 INTERNET: www.stowmfg.com

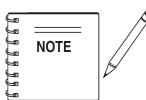
### **Direct TOLL-FREE access** to our Parts Department:

Toll-free nationwide — 800-427-1244 Toll-free FAX — 800-6-PARTS-7 (800/672-7877)

# STOW MS-70 PLASTER/MORTAR MIXER — SPECIFICATIONS

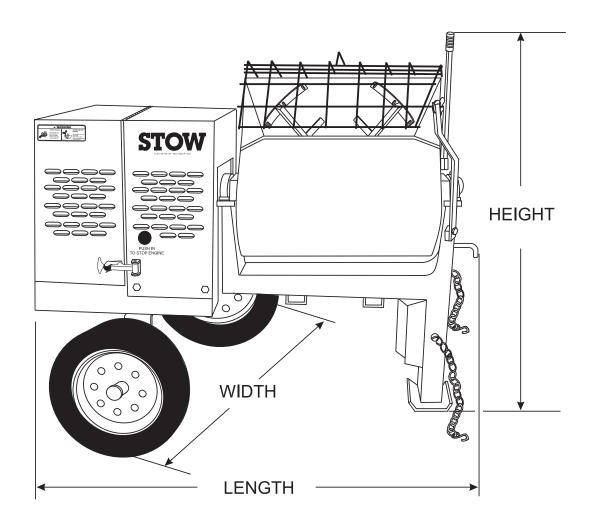
| TABLE 1. MIXER SPECIFICATIONS |                         |  |  |  |
|-------------------------------|-------------------------|--|--|--|
| Capacity                      | 7.0 cu. ft (198 liters) |  |  |  |
| Bag Capacity                  | 1-1/2 to 2-1/2 bags     |  |  |  |
| Weight                        | 788 lbs. (357 kg.)      |  |  |  |
| Height W/Dump Handle          | 73 in. (185 cm.)        |  |  |  |
| Discharge Height              | 21 in. (53 cm.)         |  |  |  |
| Drive                         | V-Belt/Gear             |  |  |  |
| Dump Action                   | Manual                  |  |  |  |

| Table 2. Specifications (Engine & Electric Motor) |   |  |   |  |  |
|---|---|--|---|--|--|
|   | Model   | HONDA GX240K1HA2                               | BALDOR 35L229S302                               |  |  |
|   | Type Air-cooled 4 stroke, OHV, Horizontal Shaft Gasoline Engine |  | 1.5 HP, 115/230, Single<br>Phase Electric Motor |  |  |
|   | Bore X Stroke   | 2.90 in. X 2.30 in.<br>(73 mm x 58 mm)         | N/A   |  |  |
|   | Displacement  | 14.81 cc                                       | N/A   |  |  |
| Engine/Electric Motor                             | /Electric Motor Max Output 8.0 H.P./3600 R.P.M.                 |  | 1.5 H.P./1725 RPM                               |  |  |
|   | Fuel Tank Capacity  | Approx. 1.59 U.S. Gallons (6 Liters)           | N/A   |  |  |
|   | Fuel  | Unleaded Gasoline                              | N/A   |  |  |
|   | Lube Oil Capacity 2-1/3 pints                                   |  | N/A   |  |  |
|   | Speed Control Method  | Centrifugal Fly-weight<br>Type                 | N/A   |  |  |
|   | Starting Method   |  | N/A   |  |  |
| Dimensions (L x W x H)                            |   | 14.0 x 16.9 X 16.1 in.<br>(355 X 430 X 410 mm) | 13.3 x 8.7 X 9.06 in.<br>(338 X 220 X 230 mm)   |  |  |
| Dry Net Weight                                    |   | 55.1 lbs. (25 Kg.)                             | Approx. 22 lbs. (10 Kg.)                        |  |  |



In accordance with our established policy of constant improvement, we reserve the right to amend these specifications at any time without notice.

### STOW MS-70 PLASTER/MORTAR MIXER — DIMENSIONS



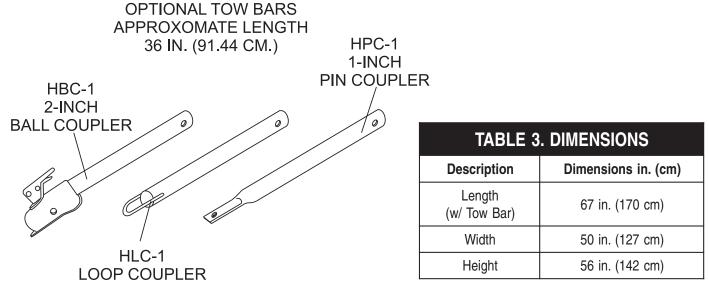


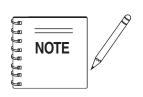
Figure 1. Dimensions

### STOW MS-70 MIXER — SAFETY MESSAGE ALERT SYMBOLS

### FOR YOUR SAFETY AND THE SAFETY OF OTHERS!

Safety precautions should be followed at all times when operating this equipment. Failure to read and understand the Safety Messages and Operating Instructions could result in injury to yourself and others.





This Owner's Manual has been developed to provide complete instructions for the safe and efficient operation of the **STOW Model MS-70** *mortar* and *plaster* mixer. Refer to the engine manufacturers instructions for data relative to its safe operation.

Before using this mixer, ensure that the operating individual has read and understands all instructions in this manual.

### SAFETY MESSAGE ALERT SYMBOLS

The three (3) Safety Messages shown below will inform you about potential hazards that could injure you or others. The Safety Messages specifically address the level of exposure to the operator, and are preceded by one of three words: **DANGER**,



You **WILL** be **KILLED** or **SERIOUSLY INJURED** if you **DO NOT** follow these directions.



You **CAN** be **KILLED** or **SERIOUSLY INJURED** if you **DO NOT** follow these directions.



You **CAN** be *INJURED* if you **DO NOT** follow these directions.

### **HAZARD SYMBOLS**

Potential hazards associated with the operation of a *MS-70 Plaster/Mortar Mixer* will be referenced with Hazard Symbols which appear throughout this manual, and will be referenced in conjunction with Safety Message Alert Symbols.

### **WARNING**

**Lethal Exhaust Gas Hazards** 

Engine exhaust gases contain poisonous carbon monoxide. This gas is colorless and odorless, and can cause death if inhaled. **NEVER** operate this equipment in a confined area or enclosed structure that does not provide ample free flow air.



### **A** WARNING

### **Explosive Fuel Hazards**

**Gasoline** is extremely flammable, and its vapors can cause an explosion if ignited. **DO NOT** start the engine near spilled fuel or combustible fluids.



**DO NOT** fill the fuel tank while the engine is running or hot. **DO NOT** overfill tank, since spilled fuel could ignite if it comes into contact with hot engine parts or sparks from the ignition system. Store fuel in approved containers, in well-ventilated areas and away from sparks and flames.

### **WARNING**

#### **Burn Hazards**

Engine components can generate extreme heat. To prevent burns, **DO NOT** touch these areas while the engine is running or immediately after operations. Never operate the engine with heat shields or heat guards removed.



### **WARNING**

**Respiratory Hazards** 

**ALWAYS** wear approved *respiratory* protection when required.



### STOW MS-70 MIXER — SAFETY MESSAGE ALERT SYMBOLS



**Rotating Parts Hazards** 

**NEVER** operate equipment with covers, or guards removed. Keep fingers, hands, hair and clothing away from all moving parts to prevent injury.



### **A** CAUTION

Equipment Damage Hazards

Other important messages are provided throughout this manual to help prevent damage to your light tower, other property, or the surrounding environment.



**Accidental Starting Hazards** 

**ALWAYS** disconnect the electrical power cord from the electric motor, when the mixer is not in use and place the **ON/OFF** switch in the **OFF** position.





**Eye and Hearing Hazards** 



**ALWAYS** wear approved eye and hearing protection.

### STOW MS-70 PLASTER/MORTAR MIXER — RULES FOR SAFE OPERATION



#### Read this manual!

Failure to follow instructions in this manual may lead to serious injury or even death! This equipment is to be operated by trained and qualified personnel only! This equipment is for industrial use only.

The following safety guidelines should always be used when operating the STOW MS-70 mortar and plaster mixer:

#### **GENERAL SAFETY**

■ DO NOT operate or service this equipment before reading this entire manual.



- This equipment should not be operated by persons under 18 years of age.
- **NEVER** operate this equipment without proper protective clothing, shatterproof glasses, steel-toed boots and other protective devices required by the job.











- NEVER operate this equipment when not feeling well due to fatigue, illness or taking medicine.
- NEVER operate this equipment under the influence of drugs or alcohol.







■ ALWAYS wear proper respiratory (mask), hearing and eye protection equipment when operating the mixer.



- **NEVER** place hands inside the drum while the blades are rotating.
- Whenever necessary, replace nameplate, operation and safety decals when they become difficult read.
- Manufacture does not assume responsibility for any accident due to equipment modifications.
- **NEVER** use accessories or attachments, which are not recommended by Multiquip for this equipment. Damage to the equipment and/or injury to user may result.

■ NEVER touch the hot exhaust manifold, muffler or cylinder. Allow these parts to cool before servicing engine or mixer.



- High Temperatures Allow the engine to cool before adding fuel or performing service and maintenance functions. Contact with hot! components can cause serious burns.
- The engine section of this mixer requires an adequate free flow of cooling air. NEVER operate the mixer in any enclosed or narrow area where free flow of the air is restricted. If the air flow is restricted it will cause serious

damage to the mixer or engine and may cause injury to people. Remember the mixer's engine gives off **DEADLY** carbon monoxide gas.



- ALWAYS refuel in a wellventilated area, away from sparks and open flames.
- ALWAYS use extreme caution when working with flammable liquids. When refueling, stop the engine and allow it to cool. DO NOT <u>smoke</u> around or near the machine. Fire or explosion could result from fuel vapors, or if fuel is spilled on a hot engine.
- NEVER operate the mixer in an explosive atmosphere or near combustible materials. An explosion or fire could result causing severe **bodily** harm or even death.
- Topping-off to filler port is dangerous, as it tends to spill fuel
- Stop the engine when leaving the mixer unattended.
- Block the unit when leaving or when using on a slope.
- Maintain this equipment in a safe operating condition at all times.



**Starting the Mixer Engine** 

**NEVER!** start the engine or engage the paddle arms when the drum is in the discharge (down) position.

### STOW MS-70 PLASTER/MORTAR MIXER — RULES FOR SAFE OPERATION

- ALWAYS stop the engine before servicing, adding fuel and oil.
- **NEVER** run engine without air filter. Severe engine may occur.
- ALWAYS service air cleaner frequently to prevent carburetor malfunction.
- ALWAYS check the machine for loosened threads or bolts before starting.
- **ALWAYS** be sure the operator is familiar with proper safety precautions and operations techniques before using mixer.
- ALWAYS store equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children.
- DO NOT operate this equipment unless all guards and safety devices are attached and in place.
- CAUTION must be exercised while servicing this equipment. Rotating and moving parts can cause injury if contacted.
- When towing, an adequate safety chain must be fastened to the frame. See Towing Guidelines section in this manual.
- Keep all *inexperienced* and *unauthorized* people away from the equipment at all times.
- Unauthorized equipment modifications will void all warranties.
- Check all fasteners periodically for tightness. Also check towing tongue bolt, lock nut and wheel lug nuts for wear.
- Stop the engine and disconnect the spark plug before allowing anybody's hands in the mixing drum.
- **NEVER** pour or spray water over the engine or electric motor.

# **WARNING**

# Stand Clear of the Mixer when in use

Always stand clear of the dump handle when the mixer is in operation. Any binding of material between the mixer blades and the drum will cause the drum handle to quickly move and could cause bodily harm.

- Depending on type of mixer, test the *ON/OFF* switch for either the gasoline engine or electric motor before operating. The purpose of these switches is to shut down the engine or motor of the mixer.
- Refer to the *HONDA Engine Owner's Manual* for engine technical questions or information recommended by Multiquip for this equipment. Damage to the equipment and/or injury to user may result.

#### **TRANSPORTING**

- ALWAYS shutdown engine before transporting.
- Tighten fuel tank cap securely and close fuel cock to prevent fuel from spilling.
- Drain fuel when transporting mixer over long distances or bad roads.

#### **MAINTENANCE**

- **NEVER** lubricate components or attempt service on a running mixer.
- ALWAYS allow the mixer a proper amount of time to cool before servicing.
- Keep the mixer in proper running condition.
- Fix damage to the mixer immediately and always replace broken parts.
- Dispose of hazardous waste properly. Examples of potentially hazardous waste are used motor oil, fuel and fuel filters.
- **DO NOT** use food or plastic containers to dispose of hazardous waste.

### **EMERGENCIES**

■ ALWAYS know the location of the nearest *fire* extinguisher and first aid kit.





■ In emergencies *always* know the location of the nearest phone or *keep a phone on the job site*. Also know the phone numbers of the nearest *ambulance*, *doctor* and *fire department*. This information will be invaluable in the case of an emergency.







### STOW MS-70 PLASTER/MORTAR MIXER —TOWING GUIDELINES

### **Towing Safety Precautions**



# Regularly Inspect Towing Components

To reduce the possibility of an accident while transporting the mixer on public roads, always make sure that the mixer towing components and the towing vehicle are in good operating condition and both units are mechanically sound.

The following list of suggestions should be used when towing the mixer:

- Check with your county or state safety towing regulations department before towing your *mixer*.
- Make sure that the hitch and coupling of the towing vehicle are rated equal to, or greater than the trailer "gross vehicle weight rating" (GVWR).
- ALWAYS inspect the hitch and coupling for wear. NEVER tow the mixer with defective hitches, couplings, chains etc.
- CHECK the tire air pressure on both the towing vehicle and the trailer. Also check the tire tread wear on both vehicles.
- ALWAYS make sure the mixer is equipped with a "Safety Chain"
- **ALWAYS** attach trailer's safety chain to the frame of towing vehicle.
- **ALWAYS** make sure that the towing vehicle's directional, backup, and brake lights are working properly.
- Remember in most cases the maximum speed unless otherwise posted for highway towing is **55** MPH, however before towing your mixer, check your local state, and county vehicle towing requirements. Recommended offroad towing is not to exceed **10** or **15** MPH or less depending on type of terrain.
- Place *chocked blocks* underneath wheels to prevent *rolling*, while parked, if disconnected from towing vehicle.
- Inflate tires to correct pressure, inspect tires for cuts, and excessive wear. See Table 9 (Tire Wear Troubleshooting).
- When towing of the mixer is required, place the drum in the up position (mouth facing upwards) and lock the drum latch.

- ALWAYS make sure that the fuel valve lever is in the OFF position (gasoline models only).
- Check wheel mounting lug nuts with a torque wrench. Torque wheel lug nuts as described in the maintenance section of this manual.
- Check tightness of U-clamp nuts, torque suspension hardware as referenced in the maintenance section of this manual.
- Avoid sudden stops and starts. This can cause skidding, or jackknifing. Smooth, gradual starts and stops will improve gas milage.
- Avoid sharp turns to prevent rolling.

### **Tow Bar to Vehicle Connection (Coupler Only)**

 Check the vehicle hitch ball, and mixer's coupler for signs of wear or damage. Replace any parts that are worn or damaged before towing.



# Replacing Towing Components

If the mixer tow bar is deformed or damaged, replace the *entire* tow bar. **NEVER** tow the mixer with a defective tow bar. There exists the possibility of the mixer separating from the towing vehicle.

- Use only a 2-inch ball diameter (towing vehicle), this will
  match the mixer's 2-inch coupler. Use of any other ball
  diameter will create an extremely dangerous condition
  which can result in separation of the coupler and ball or
  ball failure.
- 3. After tow bar has been connected to mixer (see next page), attach mixer's coupler to the hitch ball on the towing vehicle securely and make sure the lock lever is in the down position (locked).

### Mixer Tow Bar Vehicle Connection (Pintle and Loop)

- 1. Make sure the bumper on the towing vehicle is equipped to handle either a pintle or loop type tow bar configuration.
- 2. After tow bar has been connected to mixer (see next page), secure either type of tow bar to the towing vehicle, following state and county towing regulations.
- 3. As a minimum, use a 1/2-inch bolt and nylock nut grade 5 when securing the tow bar to the towing vehicle and to the unit being towed.

### STOW MS-70 PLASTER/MORTAR MIXER — SAFETY CHAIN CONNECTION

# **CAUTION**

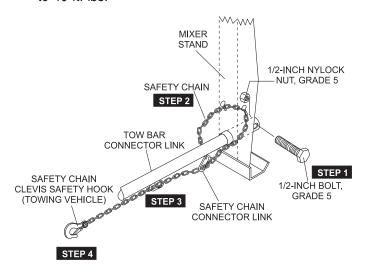
### **Always Tow with** a Safety Chain

**NEVER!** tow the mixer with the safety chain removed. The safety chain is intended to prevent complete separation of the mixer from the towing vehicle in the event of a tow bar failure.

Reference Figure 2 for the installation of the *safety chain*.

#### **Tow Bar to Mixer Connection**

- 1. Insert the tow bar through the round opening at the bottom of the mixer stand.
  - Align the hole on the tow bar with the hole on the mixer frame, and insert 1/2-inch bolt through tow bar and frame. Secure tow bar to frame with 1/2-inch nylock nut. Tighten to 40 ft.-lbs.



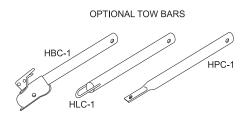


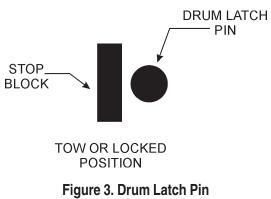
Figure 2. Tow Bar and Safety Chain Installation

- 2. Route the safety chain through the holes just above the tow bar, located on each side of the mixer stand.
  - Loop the chain together and place under the tow bar. Secure the loop with the connector link.
- 3. extend the safety chain along the length of the tow bar, looping it through the tow bar's connector link. Remove any excess chain slack.
- Connect the free end of (clevis safety hook) the safety chain to the towing vehicle. Remember it is critical that the length of the chain be properly adjusted, to prevent the draw bar and the front of the mixer stand from dropping to the the ground (contact) in the event the draw bar becomes disconnected from the towing vehicle.

# CAUTION

### **Drum Saftey** when Towing

**DO NOT** tow the mixer unless the mixing drum is completely empty. ALWAYS make sure the drum latch pin is fully engaged to the *right* (Figure 3) of the drum stop block. This will keep the drum from rotating.



(Tow or Locked Position)

### MS-70 PLASTER/MORTAR MIXER — OPERATION AND SAFETY DECALS

### **Machine Safety Decals**

The STOW MS-70 mortar and plaster mixer is equipped with a number of safety decals. These decals are provided for operator safety and maintenance information. Figure 4 below illustrates these decals as they appear on the machine. Should any of these decals become unreadable, replacements can be obtained from your dealer.



P/N: 35137



P/N: 504713



P/N: 13118



STOW
A DIVISION OF MULTIQUIP INC.

P/N: 51064



CONTACT MQ PARTS
DEPARTMENT



P/N: DCL335



P/N: 513523



**P/N DCL151** 



P/N 513522



P/N 513479



P/N: CIPDCL160



P/N: EM948630



P/N: DCL280

Figure 4. Mixer Operation and Safety Decals

### STOW MS-70 PLASTER/MORTAR MIXER — GENERAL INFORMATION

#### **Application**

The STOW MS-70 series mixers (drum capacity of 7.0 cu. ft./198 liters) are shipped completely assembled and have been factory tested and are ready for use.

This mixer is <u>only</u> intended for the production of *plaster* and *mortar*. The mixer must be used for its intended purpose and is not suitable for the mixing of *flammable* or *explosive* substances. The mixer <u>must not be used</u> in an explosive atmosphere. This mixer has a batch capacity between 2-1/2 and 3-1/2 bags.

#### **Power Plants**

The STOW *plaster* and *mortar* mixer can be powered by a Honda GX240K1HA2air-cooled, 4-stroke gasoline engine or a 1.5 HP electric motor. Refer to Table 2 for specific engine or electric motor data information.

#### **Electrical**

If mixer is equipped with an *electric motor*, make sure that the power being supplied to the motor corresponds to the voltage rating label on the motor. Supplying the wrong voltage to the electric motor will cause severe electrical damage to the motor.

Always make sure the *OFF/ON* switch on the electric motor is in the *OFF* position before applying power.

It is **strongly recommended** when inserting the mixer's power cord into a receptacle, that a G.F.C.I. (**Ground Fault Current Interrupter**) receptacle be used (115 VAC applications).

#### **Extension Cables**

The extension cable should be a 3-wire configuration that includes a ground wire that conforms to UL code. The wire cross section must be a minimum of 2.5 mm<sup>2</sup>. Choose an extension cord of adequate current carrying capacity as referenced in Table 6. Remember *cable distance* affects the current-voltage capacity of the extension cable.

Ensure that the extension cable is carefully laid out avoiding *wet areas*, *sharp edges* and locations where vehicles might run over it. Avoid allowing the extension cable to be trapped underneath the mixer.

Unroll the extension cable fully or it will overheat and could catch fire. Make sure that all extension cable connections are dry and safe. Replace any defective or badly worn extension cable immediately.

#### Hardware

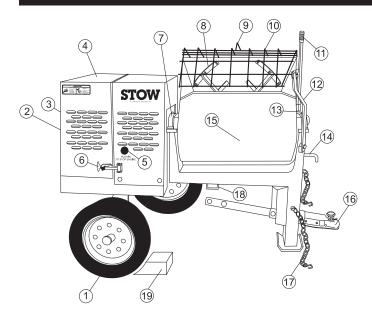
Check all hardware on the mixer before starting. Periodically inspect all hardware. Loose hardware can contribute to early component failure and poor performance. Use Table 4 as general guideline when torqueing of mixer hardware is required. Remember to keep all mixer hardware components tight.

| Table 4. Hardware Torque<br>Recommendations |                 |  |  |  |
|---|-----------------|--|--|--|
| Hardware<br>Diameter                        | Torque (ft-lbs) |  |  |  |
| 5/16-inch x 18                              | 14              |  |  |  |
| 3/8-inch x 16                               | 24              |  |  |  |
| 3/8-inch x 24                               | 37              |  |  |  |
| 1/2-inch x 13                               | 39              |  |  |  |
| 1/2-inch x 13<br>(Grade 8)                  | 90              |  |  |  |

#### **Engine Maintenance**

For basic engine maintenance, refer to the engine maintenance section in this manual. For a more detailed engine maintenance, refer to the *Honda* Engine Owner's manual furnished with the engine.

### STOW MS-70 PLASTER/MORTAR MIXER — BASIC MIXER COMPONENTS



**Figure 5. Mixer Components** 

Figure 5 illustrates the basic components and controls of the STOW MS-70 mixer

- 1. **Tires Ply** The tire ply (layers) number is rated in letters; This mixer uses 13-inch 4-ply tires.
- Engine Cover Lift this cover to gain access to the engine compartment.
- Belt Slip Lever When starting this lever should be move upward and to the left. For mixing place the lever in the down position. See attached decal located adjacent to lever.
- ON/OFF Switch (electric) This switch is provided on mixers with electric motors. To gain access to this switch, lift the engine cover. When activated it will shut down the electric motor.
- ON/OFF Switch (gasoline) This switch is provided on mixers with gasoline engines only and is located on the side of the engine cover. When activated it will shut down the engine.
- 6. **Latch** Use this latch to secure the engine compartment cabinet.
- 7. **Drum Bearing** There is on each end of the mixing drum, a sealed bearing. Bearings are packed and sealed at the factory and require no further maintenance.

- 8. **Mixing Paddles** Used in the mixing of material. This unit uses four different types of paddles to provide a fast uniform mix.
- Bag Cutter—This feature allows compound mixing bags to be opened easily, therefore allowing the contents of the bag to fall directly into the mixing drum.
- 10. Safety Grill Provided for operator safety. This safety grill is designed to keep hands and solid objects out of the mixing drum when in use. This grill should be closed at all times when mixer is in use. DO NOT remove the grill or grill opening bar. Keep the grill clean by washing it down daily.
- 11. **Dump Handle** Pull this handle downward to dump the contents of the drum. Push the handle upward to return the drum to its vertical position.
- 12. Safety Grill Lock Handle To prevent injury to hands and arms, the safety grill should ALWAYS be locked when the mixing of plaster or mortar is required. Also when transporting the mixer the safety grill should be locked. The safety grill should only be un-locked when cleaning of the blades and drum is required.
- Pivot Point/Zerk Fitting There is, on each end of the mixing drum a zerk grease fitting. These fittings lubricate the dumping mechanism. Lubricate both fittings at least twice a week.
- 14. Dump Handle Release Pin Pull this pin outward (spring loaded) to release the drum, then pull down on the dump handle to place the drum in the dump position. When drum is in dump position, pin will automatically lock drum.
- 15. **Steel Mixing Drum** Mixing materials such as mortar, plaster are to be placed into this drum for mixing. Always clean the drum after each use.
- 16. **Tow Bar/Coupler** This mixer uses a 2-inch coupler or pintle towbar.
- 17. **Safety Chain** This mixer uses a 3/16-inch thick, 72-inches long zinc-plated saftey chain. *ALWAYS* connect the safety chain when towing.
- 18. Forklift Pockets When lifting of the mixer is required, use these fork lift pockets to lift the mixer. Remember to insert the forks of the forklift a minimum of 24 inches into the lift pockets.
- Chock Blocks Place these blocks (not included as part of the mixer package) under each mixer wheel to prevent rolling.

### STOW MS-70 PLASTER/MORTAR MIXER — BASIC ENGINE COMPONENTS

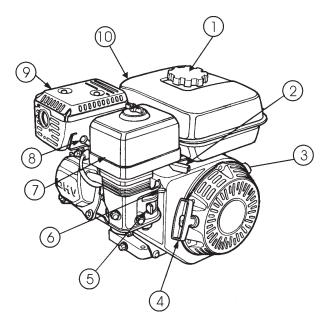


Figure 6. Engine Controls and Components

#### **INITIAL SERVICING**

The engine (Figure 6) must be checked for proper lubrication and filled with fuel prior to operation. Refer to the manufacturers Engine manual for instructions & details of operation and servicing.

 Fuel Filler Cap – Remove this cap to add unleaded gasoline to the fuel tank. Make sure cap is tightened securely. DO NOT over fill.

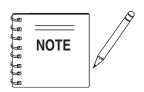
# **DANGER**

# Explosive Fuel Hazard

Adding fuel to the tank should be done only when the engine is stopped and has had an opportunity to cool down. In the event of a fuel spill, **DO NOT** attempt to start the engine until the fuel residue has been completely wiped up, and the area surrounding the engine is dry.

- Throttle Lever Used to adjust engine RPM speed (lever advanced forward SLOW, lever back toward operator FAST).
- 3. **Engine ON/OFF Switch ON** position permits engine starting, OFF position stops engine operations.
- 4. Recoil Starter (pull rope) Manual-starting method. Pull the starter grip until resistance is felt, then pull briskly and smoothly.

- 5. Fuel Valve Lever OPEN to let fuel flow, CLOSE to stop the flow of fuel.
- Choke Lever Used in the starting of a cold engine, or in cold weather conditions. The choke enriches the fuel mixture.
- 7. Air Cleaner Prevents dirt and other debris from entering the fuel system. Remove wing-nut on top of air filter cannister to gain access to filter element.



Operating the engine without an air filter, with a damaged air filter, or a filter in need of replacement will allow dirt to enter the engine, causing rapid engine wear.

# **WARNING**

#### **Burn Hazard**

Engine components can generate extreme heat. To prevent burns, **DO NOT** touch these areas while the engine is running or immediately after operating. **NEVER** operate the engine with the muffler removed.



- 8. **Spark Plug** Provides spark to the ignition system. Set spark plug gap to 0.6 0.7 mm (0.028 0.031 inch) Clean spark plug once a week.
- 9. Muffler Used to reduce noise and emissions.
- 10. **Fuel Tank** Holds unleaded gasoline. For additional information refer to engine owner's manual.

### STOW MS-70 PLASTER/MORTAR MIXER — ELECTRIC MOTOR

#### **Electric Motor**

For maintenance care and operation of the electric motor, refer to your electric motor instruction booklet furnished with the motor.

Protect the electric motor from dust as much as possible and keep ventilating openings clean.



### Electric Motor Safety

**DO NOT** spray water at any time on the *electric motor*. **DO NOT** operate electric motor in a explosive environment.

The electric motor used in this mixer is a single-phase 3 HP motor. The input voltage requirement for this motor is 115/230 VAC, and has been pre-set to 230VAC.

#### **Electric Motor Connection**

A 12-inch electrical cable (Figure 7) is provided with the electrical motor for hookup to a power source. Table 5 shows the required NEMA connector for the desired motor horsepower rating. In addition, Table 5 also shows the matching NEMA approved connector for the required extension cord.



# **Electric Motor Connections**

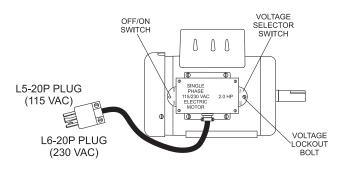
**ALWAYS** make certain that the power source required for the electric motor is **correct** and always use the correct NEMA configuration plug. **Failure** to supply the correct voltage to the motor can severely damage the motor.



It is strongly recommended that all electrical wiring be done by a *licensed electrician*.

Special attention should be given to the electric switch as well as the over-and-under voltage protection devices as per regulations set forth in the local electrical safety code handbook

| TABLE 5. ELECTRIC MOTOR WIRING INFORMATION |                            |                                     |  |  |
|--|----------------------------|-------------------------------------|--|--|
| Motor                                      | 115-230 VAC - Single Phase |                                     |  |  |
| Horsepower<br>Rating                       | NEMA Plug Connector        | Mating NEMA<br>Receptacle Connector |  |  |
| 1.5 HP<br>(115 VAC)                        | L5-20P P/N EM940537        | L5-20R P/N EM940538                 |  |  |
| 1.5 HP<br>(230 VAC)                        | L6-20P P/N 940539          | L6-20R P/N 940540                   |  |  |



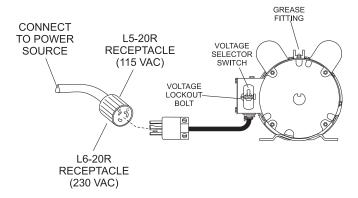


Figure 7. Single Phase Electric Motor With 12-inch Pigtail

### STOW MS-70 PLASTER/MORTAR MIXER — ELECTRIC MOTOR

The motor supplied is wired for 115 VAC grounded operation. Make certain that the correct size grounded (3-wires) extension cord is used. See Table 6.

Motors can burn out when the line voltage falls 10% below the voltage rating of the motor. Failure to use proper voltage will cause the motor to overheat and actuate the overload switch.

If overload protection should actuate because of improper voltage or any other malfunction, turn the main switch on the motor to the "**OFF**" position and correct the problem, press the reset switch button, and turn the main switch to the "**ON**" position.

| <b>Electric</b> | Motor | Voltage | Switch |
|-----------------|-------|---------|--------|
|                 |       |         |        |

- ALWAYS make certain the motor switch is "OFF" and the power cord has been disconnected from the power source.
- Remove the voltage lock-out bolt (Figure 7). Change the
  position of the *voltage change toggle switch* from 115
  VAC to 230 VAC. The mixer is factory wired for 115 VAC
  operation.
- 3. Replace the voltage lock-out bolt.
- Important!, when changing the input voltage to the motor from 115 to 230 VAC, the plug on the motor power cord must also be changed. See Table 5.

| TABLE 6. RECOMMENDED EXTENSION CORD SIZES |        |         |                     |                     |                      |                      |
|---|--------|---------|---------------------|---------------------|----------------------|----------------------|
| Model                                     | Motor  | Voltage | 50 ft.<br>(15.24 m) | 75 ft.<br>(22.86 m) | 100 ft.<br>(30.48 m) | 200 ft.<br>(60.96 m) |
| WM-70                                     | 1.5 HP | 115     | No. 12              | No. 10              | No. 8                | No. 6                |
| (Electric)                                | 1.5 ПР | 230     | No. 14              | No. 12              | No. 12               | No. 8                |

### STOW MS-70 — PADDLE BLADE ADJUSTMENT (STEEL DRUM)

Adjust paddles as shown in Figure 8.

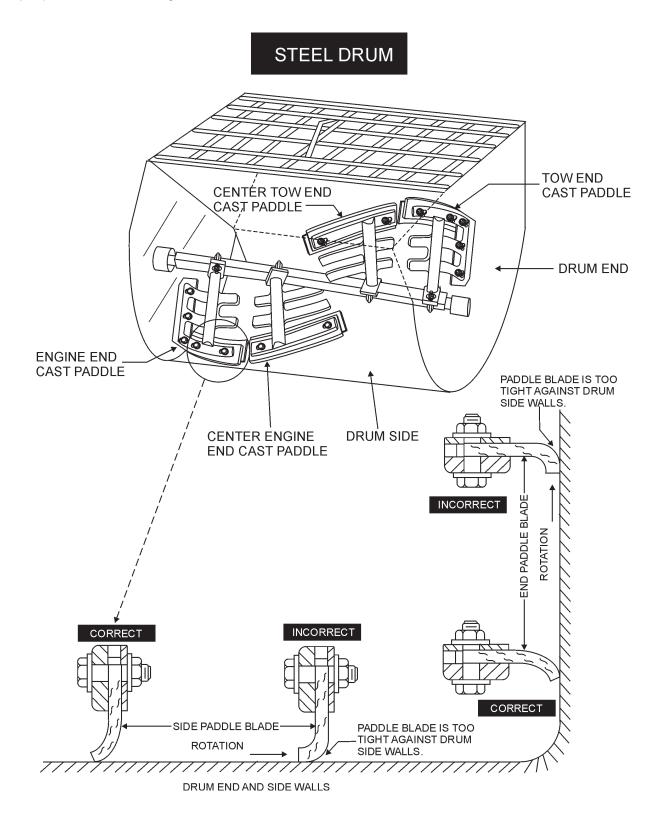


Figure 8. Paddle Blade Adjustment, Steel Drum

### STOW MS-70 PLASTER/MORTAR MIXER — INSPECTION

### **Before Starting**

- 1. Read *all safety instructions* at the beginning of manual.
- 2. Clean the *mixer*, removing dirt and dust, particularly the engine cooling air inlet, carburetor and air cleaner.
- 3. Check the air filter for dirt and dust. If air filter is dirty, replace air filter with a new one as required.
- 4. Check carburetor for external dirt and dust. Clean with dry compressed air.
- 5. Check fastening nuts and bolts for tightness.

# **A** CAUTION

Eyesight and Hearing Protection

**ALWAYS** wear approved eye and hearing protection before operating the mixer.



# **A** CAUTION

Inspection & Maintenance Saftev

**NEVER** place hands or feet inside the engine guard cover while the engine is running. **ALWAYS** shut the engine down before performing any kind of maintenance service on the mixer.



### **Engine Oil Check**

- 1. To check the engine oil level, place the mixer on secure level ground with the engine stopped.
- 2. Remove the filler dipstick from the engine oil filler hole (Figure 9) and wipe it clean.

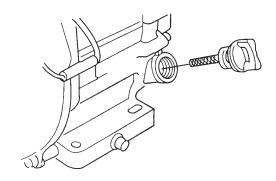
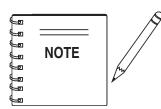


Figure 9. Engine Oil Dipstick (Removal)

- Insert and remove the dipstick without screwing it into the filler neck. Check the oil level shown on the dipstick.
- 4. If the oil level is low (Figure 10), fill to the edge of the oil filler hole with the recommended oil type (Table 7). Maximum oil capacity is 2.33 gts. (1.09 liters)



Reference manufacturer engine manual for specific servicing instructions.

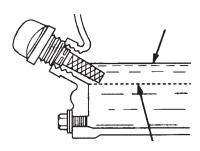


Figure 10. Engine Oil Dipstick (Oil Level)

| Table 7. Oil Type           |                |               |  |  |
|-----------------------------|----------------|---------------|--|--|
| Season Temperature Oil Type |                |               |  |  |
| Summer                      | 25°C or Higher | SAE 10W-30    |  |  |
| Spring/Fall                 | 25°C~10°C      | SAE 10W-30/20 |  |  |
| Winter                      | 0°C or Lower   | SAE 10W-10    |  |  |

### STOW MS-70 PLASTER/MORTAR MIXER — INSPECTION

#### **Fuel Check**

# DANGER

### **Explosive Fuel** Hazard

If your mixer has a gasoline engine, determine if the engine fuel is low. If fuel is low, remove the fuel filler cap and fill with unleaded gasoline. Motor fuels are highly flammable and can be dangerous if mishandled. DO NOT smoke while refueling. **DO NOT** attempt to refuel



Remove the gasoline cap located on top of fuel tank.

the mixer if the engine is *hot!* or *running*.

- Visually inspect to see if fuel level is low. If fuel is low, replenish with unleaded fuel.
- When refueling, be sure to use a strainer for filtration. **DO NOT** top-off fuel. Wipe up any spilled fuel.

### Start/Stop Switch

NEVER! disable or disconnect the start/stop switch. It is provided for operator safety. Injury may result if it is disable, disconnected or improperly maintained.

#### V-belt Check

A worn or damaged V-belt can adversely affect the performance of the mixer. If a V-belt is defective or worn simply replace the V-belt as outlined in the maintenance section of this manual.

#### **Blade Check**

Check for worn or paddle blades. Make sure that all blades are adjusted properly. See blade adjustment procedure in this manual. Replace all defective or damaged blades immediately.

#### Controls

### **Start/Stop Switches**

This mixer has been equipped with a start/stop switch for both the gasoline and electric motor mixers. These switches should be tested every time the engine or electric motor is started.

### **Grease Fittings (Dumping Mechanism)**

Check the zerk grease fittings at each end of the mixing drum. These grease fittings lubricate the dumping mechanism. If the dumping handle is stiff or hard to move lubricate these fittings.

### STOW MS-70 PLASTER/MORTAR MIXER — START-UP PROCEDURES

This section is intended to assist the operator with the initial start-up of the STOW MS-70H (gasoline engine) or STOW MS-70E (electric motor) mixer. It is extremely important that this section be read carefully before attempting to use the mixer in the field



**DO NOT** use your mixer until this section is thoroughly understood.

# **WARNING**

### **General Safety**

Failure to understand the operation of the STOW MS-70 series mixers could result in **severe damage** to the mixer or **personal injury**.

See Figures 5 and 6 for the location of any control referenced in this manual.

### **A** CAUTION

### **Respiratory Hazard**



**NEVER** operate the mixer in a confined area or enclosed area structure that does not provide ample *free flow of air*.

### Starting (gasoline only)

The following steps outline the procedure for starting the engine. Depending on the type of engine employed in the mixer the steps may vary slightly. If your mixer has an electric motor disregard this section.

1. Move the fuel shut-off lever (Figure 11) to the **ON** position.



Figure 11. Fuel Shut-OFF Lever

2. To start a cold engine, move the choke lever (Figure 12) to the **CLOSED** position.

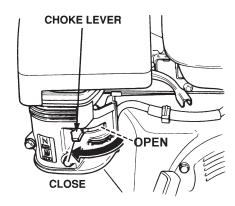


Figure 12. Choke Lever

3. Move the throttle lever (Figure 13) away from the slow position, about 1/3 of the way toward the fast position.

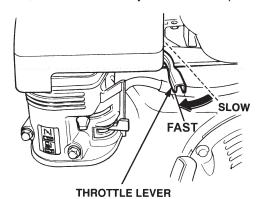


Figure 13. Throttle Lever

### MS-70 PLASTER/MORTAR MIXER — START-UP PROCEDURES

4. Turn the engine switch (Figure 14) to the **ON** position.

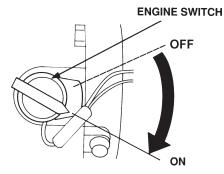


Figure 14. Engine ON/OFF Switch

5. The main **start/stop** switch located on the engine cover is (Figure 15) is used to start and stop the engine. Pull this switch outward to start the engine.

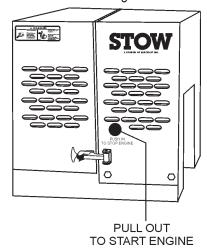


Figure 15. Start/Stop Switch (gasoline engine)

6. Place the *belt slip lever* (Figure 16) in the *START/STOP* (disengaged) position.

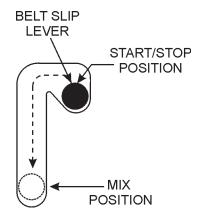


Figure 16. Belt Slip Lever (Start/Stop Position)

# **A** CAUTION

### **Preventing Drum Tipping**

Make certain the *drum lock pin* (Figures 17 and 18) is placed to the **RIGHT** (when viewing the mixer from the towpole end) of the drum stop block which is welded to the front side of the drum. Also make sure lock pin is fully engaged (locked). This will prevent the drum from tipping.

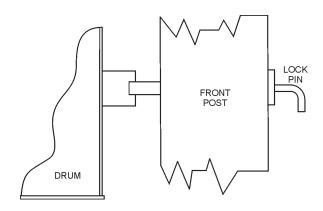


Figure 17. Drum Lock Pin (Side-View)

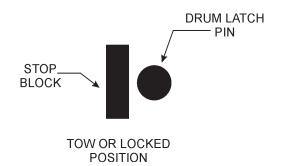


Figure 18. Drum Lock Pin (Right Position)

7. Pull the *starter grip* (Figure 19) lightly until you feel resistance, then pull briskly. Return the starter grip gently.

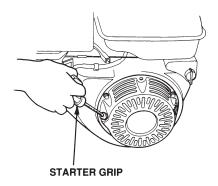


Figure 19. Starter Grip

### STOW MS-70 PLASTER/MORTAR MIXER — OPERATION/SHUT-DOWN

8. Place the belt slip lever (Figure 20) in the *mix* position. This will tilt the engine placing tension on the V-belts enabling the shaft to rotate.

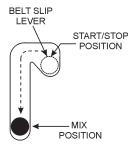


Figure 20. Belt Slip Lever (Mix Position)

### Starting (electric only)

- Using an adequate size extension cord (see Table 5), connect one end of the extension cord to the plug on the electric motor, connect the other end to the power source. Make sure the motor is configured for the proper operating voltage.
- 2. Set the electric motor's **ON/OFF** switch (Figure 7) to the **ON** position.

### **Mixing Dumping**

- The paddle shaft inside the drum should be rotating at this time.
- 2. Add a small amount water to the mixing drum.
- Lift the mixing bag compound onto the steel safety grate over the bag cutter and let the contents fall into the drum. Add more water if desired and mix compound to desired consistency.
- 4. When charging, mixing, or dumping a batch of plaster or mortar the *drum lock pin* should be placed to the *left* (when viewing the mixer from the towpole end) of the drum stop block which is welded to the front side of the drum. See Figure 21.

This will allow the operator to use both hands on the drum handle during dumping. Please note that when the lock pin is placed to the left, the drum will be maintained in the vertical position as the paddles rotate. To discharge the material the operator should hold the dump handle with **both hands** and rotate the drum to discharge the desired amount of material.

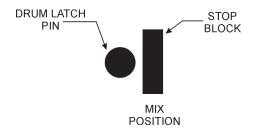


Figure 21. Drum Lock Pin (Left Position)

# WARNING

### **Dump Handle Safety**

Be sure to stand clear of the *dump handle* (Figure 22) when the mixer is operational. Any binding of material between the mixer blades and the drum will cause the drum handle to move to the discharge position and could cause bodily harm.



Figure 22. Stand Clear of Dump Handle

### **STOPPING THE MIXER (gasoline engine)**

- Place the *belt slip lever* in the *start/stop* position (Figure 20).
- 2. Push the main *start/stop* switch (Figure 15) inward to stop the engine.
- 3. Turn the fuel shut-off valve to the **OFF** position.
- 4. Disconnect the spark plug.
- 5. Clean mixer as referenced in the maintance section of this manual.

### **STOPPINGTHE MIXER (electric motor)**

- Place the electric motor's *ON/OFF* switch (Figure 4) in the OFF position.
- 2. Disconnect the electric motor's extension cord from its power source.
- Clean mixer as referenced in the maintance section of this manual.

Use Table 8 as a general maintenance guideline when servicing your engine. For more detail engine maintenance information, refer to the engine owner's manual supplied with your engine.

|                  | Table 8. Engine Maintenance Schedule |  |                                 |                                    |                                    |                                 |                                    |
|------------------|--------------------------------------|--|---------------------------------|------------------------------------|------------------------------------|---------------------------------|------------------------------------|
| DESCRIPTION (3)  | OPERATION                            | BEFORE                                   | FIRST<br>MONTH<br>OR<br>10 HRS. | EVERY<br>3 MONTHS<br>OR<br>25 HRS. | EVERY<br>6 MONTHS<br>OR<br>50 HRS. | EVERY<br>YEAR<br>OR<br>100 HRS. | EVERY<br>2 YEARS<br>OR<br>200 HRS. |
| Engine Oil       | CHECK                                | Х  |                                 |                                    |                                    |                                 |                                    |
| Engine Oil       | CHANGE                               |  | Х                               |                                    |                                    |                                 |                                    |
| Air Cleaner      | CHECK                                | Х  |                                 |                                    |                                    |                                 |                                    |
| Air Cleaner      | CHANGE                               |  |                                 | X (1)                              |                                    |                                 |                                    |
| All Nuts & Bolts | Re-tighten If<br>Necessary           | Х  |                                 |                                    |                                    |                                 |                                    |
| Charle Dlug      | CHECK-CLEAN                          |  |                                 |                                    | Х                                  |                                 |                                    |
| Spark Plug       | REPLACE                              |  |                                 |                                    |                                    |                                 | Х                                  |
| Cooling Fins     | CHECK                                |  |                                 |                                    | Х                                  |                                 |                                    |
| Spark Arrester   | CLEAN                                |  |                                 |                                    |                                    | Х                               |                                    |
| Fuel Tank        | CLEAN                                |  |                                 |                                    |                                    | Х                               |                                    |
| Fuel Filter      | CHECK                                |  |                                 |                                    |                                    | Х                               |                                    |
| Idle Speed       | CHECK-ADJUST                         |  |                                 |                                    |                                    | X (2)                           |                                    |
| Valve Clearance  | CHECK-ADJUST                         |  |                                 |                                    |                                    |                                 | X (2)                              |
| Fuel lines       | CHECK                                | Every 2 years (replace if necessary) (2) |                                 |                                    |                                    |                                 |                                    |

<sup>(1)</sup> Service more frequently when used in **DUSTY** areas.

<sup>(2)</sup> These items should be serviced by your service dealer, unless you have the proper tools and are mechanically proficient. Refer to the HONDA Shop Manual for service procedures.

<sup>(3)</sup> For commercial use, log hours of operation to determine proper maintenance intervals.

#### Maintenance

Perform the scheduled maintenance procedures as defined by Table 8 and below:

#### **DAILY**

Thoroughly remove dirt and oil from the engine and control area. Clean or replace the air cleaner elements as necessary. Check and retighten all fasteners as necessary. Check the gearbox for oil leaks. Repair or replace as needed.

#### **WEEKLY**

- Remove the fuel filter cap and clean the inside of the fuel tank.
- Remove or clean the filter at the bottom of the tank.
- Remove and clean the spark plug (Figure 23), then adjust the spark gap to 0.024 ~0.028 inch (0.6~0.7 mm). This unit has electronic ignition, which requires no adjustments.

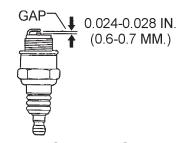


Figure 23. Spark Plug Gap

### **ENGINE OIL**

- Drain the engine oil when the oil is warm as shown in Figure 24.
- 2. Remove the oil drain bolt and sealing washer and allow the oil to drain into a suitable container.
- 3. Replace engine oil with recommended type oil as listed in Table 7. For engine oil capacity, see Table 2 (engine specifications). **DO NOT** overfill.
- 4. Install drain bolt with sealing washer and tighten securely.

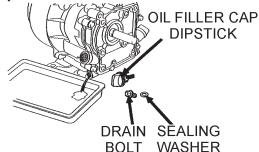


Figure 24. Engine Oil (Draining)

### **ENGINE AIR CLEANER**

- 1. Remove the air cleaner cover and foam filter element as shown in Figure 25.
- 2. Tap the paper filter element (Figure 25) several times on a hard surface to remove dirt, or blow compressed air [not exceeding 30 psi (207 kPa, 2.1 kgf/cm²)] through the filter element from the air cleaner case side. **NEVER** brush off dirt. Brushing will force dirt into the fibers. Replace the paper filter element if it is excessively dirty.
- 3. Clean foam element in warm, soapy water or nonflammable solvent. Rinse and dry thoroughly. Dip the element in clean engine oil and completely squeeze out the excess oil from the element before installing.



# Explosive Hazard

**DO NOT** use gasoline as a cleaning solvent, because that would create a risk of fire or explosion.



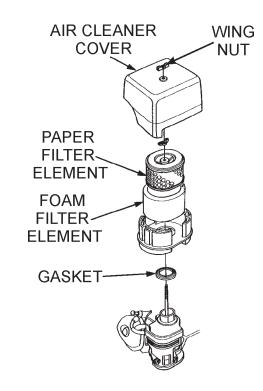


Figure 25. Engine Air Cleaner

### **Ball Socket and Clamp Face Maintenance**

- If the towing vechicle is equipped with a ball socket, smear socket periodically with multi-purpose grease. This will keep the ball socket well lubricated.
- 2. Periodically oil *pivot points* and *clamp face* surfaces of coupler with SAE 30 WT. motor oil.
- When parking or storing your mixer. Keep the coupler off the ground so dirt will not build up in the ball socket.

#### **Drum Head Seals**

There is 1 set of drum head seals (Figure 26) that will require lubrication. Lubricate the grease fitting for each drum seal *every 40 hours of operation* using any grade lithium base grease. Apply grease until visible inside of mixing drum (over grease). This will purge seal system of contamination.

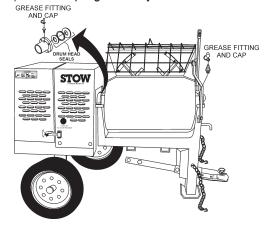


Figure 26. Grease Fittings (Drum Head Seals)

### **Drum Bearing Bracket Lubrication**

There is 1 set of drum bearing brackets (Figure 27) that will require lubrication. These brackets are intended to make the drum rotate freely. Lubricate the grease fitting for each drum bearing bracket *every month or when the drum becomes difficult to position* using multi-purpose grade grease.

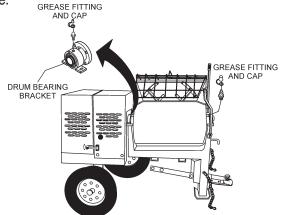


Figure 27. Grease Fittings (Dumping Mechanism)

# **CAUTION**

### Lubricating the Grease Fittings

<u>Failure</u> to lubricate the drum bearing grease fittings periodically will cause the dumping mechanism to stiffen, making the mixing drum hard to dump.

### **Countershaft Bearing Lubrication**

There is 1 set of countershaft bearings (Figure 28) that will require lubrication. Lubricate the grease fitting for each countershaft bearing *every 40 hours of operation* using any grade lithium base grease.

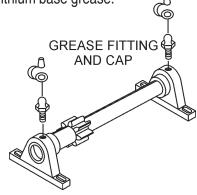
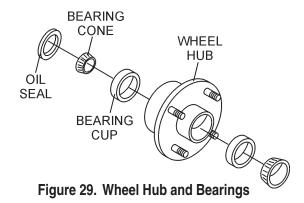


Figure 28. Grease Fittings (Countershaft)

### **Wheel Bearings**

1. After every 3 months of operation, remove the hub dust cap and inspect the wheel bearings (Figure 29). Once a year, or when required, disassemble the wheel hubs remove the old grease and repack the bearings forcing grease between rollers, cone and cage with a good grade of high speed wheel bearing grease (*never* use grease heavier than 265 A.S.T.M. penetration ("No. 2.")



2. Fill the wheel hub (Figure 28) with grease to the inside diameter of the outer races and also fill the hub grease cap. Reassemble the hub and mount the wheel. Then tighten the adjusting nut, at the same time turn the wheel in both directions, until there is a slight bind to be sure all the bearing surfaces are in contact.

Then back-off the adjusting nut 1/6 to 1/4 turn or to the nearest locking hole or sufficiently to allow the wheel to rotate freely within limits of .001" to .010" end play. Lock the nut at this position. Install the cotter pin and dust cap, and tighten all hardware.

#### MAIN GEAR AND DRIVE PINION ALIGNMENT

- Disconnect the spark plug wire (gasoline engines). If mixer is equipped with an electric motor remove power cord from AC power receptacle. In addition make sure the clutch engagement lever is dis-engaged to relieve Vbelt tension.
- The countershaft and drive pinion are mounted on a slotted base. To align drive pinion with main gear, loosen the pillow block mounting bolts and move them until the necessary alignment has been made. Remember gears must be paralleled aligned not skewed.
- Using your hand, slightly move (rock) the drive pulley back and forth to determine the amount of backlash. Insert feeler gauge between gears to determine backlash distance. Backlash should range between 0.007- 0.012 inches (Figure 30).

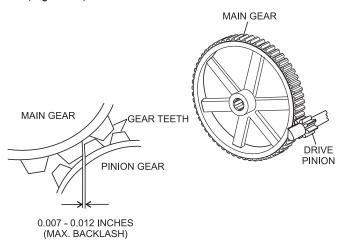


Figure 30. Drive Pinion and Main Gear (Backlash)

# INSPECT TOOTH CONTACT BETWEEN MAIN GEAR AND DRIVE PINION

- 1. Coat 3 or 4 teeth at 3 different positions on the main gear with yellow paint.
- 2. Rotate the drive pulley in both directions.
- 3. Inspect the tooth pattern.
- 4. If gear teeth are not contacting properly (Figure 31), adjust pillow block to correct the problem.

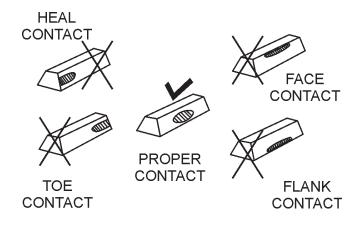
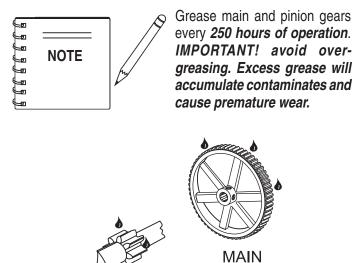


Figure 31. Gear Teeth Alignment

#### **GEAR LUBRICATION**

The surface of the pinion and main gear (Figure 32) should be very lightly greased.



DRIVE PINION

Figure 32. Pinion and Bull Gear Lubrication

**GEAR** 

### **Grease Fittings (Zerk) Maintenance (Electric Motor)**

- There are two grease (Figure 33) fittings at each end of the electric motor that will require lubrication. Lubricate these fittings about *every 16 months*.
- Use Poleyrex EM (Exxon Mobil) or equalivant lubricant. Clean grease fitting, apply grease gun to fitting (1/2 shot). Remember too much grease or injecting grease too quickly can cause premature bearing failure. Slowly apply the recommended amount of grease, taking a miniute or so to apply.

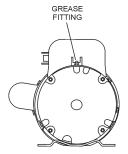


Figure 33. Grease Fittings Electric Motor

### Tires/Wheels/Lug Nuts

Tires and wheels are a very important and critical components of the trailer. When specifying or replacing the trailer wheels it is important the wheels, tires, and axle are properly matched.



### **Damaged Wheels**

**DO NOT** attempt to repair or modify a wheel. **DO NOT** install an inter-tube to correct a leak through the rim. If the rim is cracked, the air pressure in the



inter-tube may cause pieces of the rim to explode (breakoff) with great force and can cause serious eye or bodily injury.

#### Tires Wear/Inflation

Tire inflation pressure is the most important factor in tire life. Pressure should be checked cold before operation. **DO NOT** bleed air from tires when they are hot. Check inflation pressure weekly during use to insure maximum tire life and tread wear.



### **Eyesight Hazard**

**ALWAYS** wear safety glasses when removing or installing force fitted parts. Failure to comply may result in serious injury.



Table 9 (Tire Wear Troubleshooting) will help pinpoint the causes and solutions of tire wear problems.

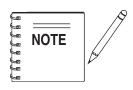
| TABLE 9. TIRE WEAR TROUBLESHOOTING |             |                                 |   |
|------------------------------------|-------------|---------------------------------|---|
| WEAR                               | PATTERN     | CAUSE                           | SOLUTION  |
|                                    | Center Wear | Over Inflation                  | Adjust pressure to particular load per tire manufacturer.       |
|                                    | Edge Wear   | Under Inflation                 | Adjust pressure to<br>particular load per<br>tire manufacturer. |
|                                    | Side Wear   | Loss of chamber or overloading. | Make sure load does<br>not exceed axle rating.<br>Align wheels. |
|                                    | Toe Wear    | Incorrect toe-in                | Align wheels.   |
|                                    | Cupping     | Out-of balance                  | Check bearing adjust-<br>ment and balance tires.                |
|                                    | Flat Spots  | Wheel lockup & tire skidding.   | Avoid sudden stops when possible and adjust brakes.             |

### **Lug Nut Torque Requirements**

It is extremely important to apply and maintain proper wheel mounting torque. Be sure to use only the fasteners matched to the cone angle of the wheel. Proper procedure for attachment of the wheels is as follows:

- 1. Start all wheel lug nuts by hand.
- 2. Torque all lug nuts in sequence. See Figure 34. **DO NOT** torque the wheel lug nuts all the way down. Tighten each lug nut in 3 separate passes as defined by Table 10.

| Table 10. Tire Torque Requirements |                      |                       |                      |
|------------------------------------|----------------------|-----------------------|----------------------|
| Wheel Size                         | First Pass<br>FT-LBS | Second Pass<br>FT-LBS | Third Pass<br>FT-LBS |
| 12"                                | 20-25                | 35-40                 | 50-65                |
| 13"                                | 20-25                | 35-40                 | 50-65                |
| 14"                                | 20-25                | 50-60                 | 90-120               |
| 15"                                | 20-25                | 50-60                 | 90-120               |
| 16"                                | 20-25                | 50-60                 | 90-120               |



**NEVER!** use an pneumatic air gun to tighten wheel lug nuts.

3. After first road use, retorque all lug nuts in sequence. Check all wheel lug nuts periodically.

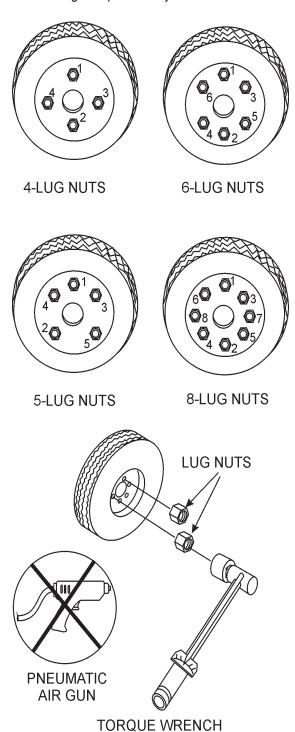


Figure 34. Wheel Lug Nuts Tightening Sequence

### Suspension

The rigid type axle and associated hardware (Figure 35) should be periodically inspected for signs of excessive wear, elongation of bolt holes, and loosening of fasteners. Replace all damaged parts immediately.

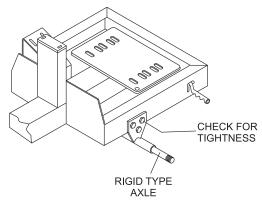


Figure 35. Axle Support Components

### **Mixer Cleaning**

- ALWAYS disconnect the spark plug wire (gasoline engines) before cleaning the inside of the drum. If mixer is equipped with an electric motor remove power cord from AC power receptacle. In addition make sure the clutch engagement lever is dis-engaged.
- 2. Make sure the rear section of the safety grate is connected to the mixing drum.
- At the end of each day's operation, place mixer drum in an upright position and spray inside of tub immediately with water to prevent lumps of dried mortar or plaster from forming and contamination of future batches, **DO NOT** allow a buildup of materials to form on the blades or anywhere inside the drum.
- 4. Rotate mixer to dump position and remove debris.
- 5. **Thoroughly clean** the entire mixer, wheels, cabinet and frame.
- 6. **NEVER!** pour or spray water over the engine or electric motor (Figure 36).

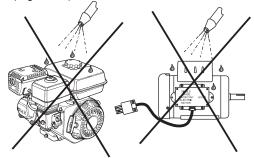


Figure 36. No Spraying of Water



# Keep Hands Clear of Drum!

When rotating the mixing drum from the dump position to the upright position, **keep hands clear of safety grate.** The possibility exists of hands or fingers being crushed (Figure 37).



Figure 37. Safety Grate (Crush Hazard)

7. When cleaning of the entire mixer is done, return mixing drum to an upright position.

#### **Mixer Storage**

For storage of the mixer for over 30 days, the following is recommended:

- Drain the fuel tank completely, or add STA-BIL to the fuel.
- Run the engine until the fuel is completely consumed.
- Completely drain used oil from the engine crankcase and fill with fresh clean oil, then follow the procedures described in the engine manual for engine storage.
- Clean the entire mixer and engine compartment.
- Place the mixing drum in the down position (mouth facing downward).
- Cover the mixer and place it a clean dry area, that is protected from harsh elements.

# STOW MS-70 PLASTER/MORTAR MIXER — TROUBLESHOOTING (ENGINE)

Practically all breakdowns can be prevented by proper handling and maintenance inspections, but in the event of a breakdown, please take a remedial action following the diagnosis based on the *Engine*, *Mixer* and *Electric Motor* Troubleshooting (Tables 11, 12 and 13) information shown below and on the proceeding pages.

If the problem cannot be remedied, please leave the unit just as it is and consult or company's service department.

| TABLE 11. ENGINE TROUBLESHOOTING           |   |  |  |
|--|---|--|--|
| SYMPTOM                                    | POSSIBLE PROBLEM  | SOLUTION   |  |
|  | Inspect carburetor to see if fuel is reaching it?                   | Check fuel line  |  |
|  | No Fuel?  | Add Fuel   |  |
|  | Water in fuel tank?   | Flush or replace fuel tank.  |  |
|  | Fuel filter clogged?  | Replace fuel filter  |  |
|  | Stuck carburetor?   | Check float mechanism.   |  |
| Poor starting                              | Spark plug is red?  | Spark plug is fouled. Check tranistor ignition unit.   |  |
|  | Spark plug is blue-white?   | Insufficient compression, injected air leaking. Carburetor jets are clogged (overflow).                                      |  |
|  | No spark present at tip of spark plug?                              | Tranistor ignition unit broken, high voltage cord cracked or broken. Start/Stop switch broken. Replace spark plug if fouled. |  |
|  | No oil?   | Add oil as required.   |  |
|  | Oil pressure alarm lamp blinks upon starting?                       | Check Automatic shutdown circuit "oil sensor".   |  |
|  | Engine will not turn over?  | Replace cylinder and piston and if necessary axel joint.   |  |
|  | Cylinder head connecting bolts loose?                               | Tighten cylinder head connecting bolts.  |  |
| Insufficient power output "no compression" | Cylinder head gasket damaged?                                       | Replace cylinder head gasket.  |  |
| Compression                                | Malfunction of valve seat?  | Re-seat valves.  |  |
|  | Spark plug is loose?  | Replace spark plug.  |  |
|  | Worn piston rings?  | Replace piston rings.  |  |
|  | Malfunction in air-cleaner system, air filter clogged?              | Clean or replace air filter.   |  |
| Insufficient power output "compression"    | Air leaking in from interface between carburetor and cylinder head? | Tighten bolts between carburetor and cylinder head. Replace cylinder head gasket.  |  |
|  | Malfunction in fuel system?   | Clean or replace fuel filter. Clean or replace carburetor. Check carburetor float.   |  |

# STOW MS-70 PLASTER/MORTAR MIXER — TROUBLESHOOTING (ENGINE)

| TABLE 11. ENGINE TROUBLESHOOTING (CONTINUED)          |   |   |
|---|---|---|
| SYMPTOM   | POSSIBLE PROBLEM                                      | SOLUTION  |
| Insufficient power output "compression" and overheats | Malfunction in cooling fan?                           | Check or replace cooling fan.                                   |
|   | Air in-take filter clogged?                           | Clean or replace air in-take filter.                            |
| Burns to much fuel                                    | Over accumulation of exhaust products?                | Clean and check valves. Check muffler, replace if necessary.    |
|   | Wrong spark plug?                                     | Replace spark plug with manufactures suggested type spark plug. |
| Exhaust color is continiously                         | Lubricating oil is wrong viscosity?                   | Replace lubricating oil with correct viscosity.                 |
| WITTE   | Worn rings?   | Replace rings   |
| Exhaust color is continiously "BLACK"                 | Air cleanner clogged?                                 | Clean or replace air cleaner.                                   |
|   | Choke valve has not been set to the correct position? | Adjust choke valve to the correct position.                     |
|   | Carburetor defective, seal on carburetor broken?      | Replace carburetor or seal.                                     |
|   | Poor carburetor adjustment "engine runs too rich?     | Adjust carburetor.  |

# STOW MS-70 — TROUBLESHOOTING (MIXER/ELECTRIC MOTOR)

| TABLE 12. MIXER TROUBLESHOOTING    |  |   |
|------------------------------------|--|---|
| SYMPTOM                            | POSSIBLE PROBLEM                         | SOLUTION  |
| Blades will not rotate.            | Worn or defective V-belt?                | Replace V-belt.   |
|                                    | Adjustment lever mis-aligned?            | Check position of adjustment lever. Adjust if necessary.  |
| Material leaking from drum ends.   | Worn or defective paddle shaft seals?    | Replace seals.  |
| Drum difficult to discharge (tilt) | Defective or worn drum support brackets? | Apply grease to bracket or replace.                       |
|                                    | Blades adjusted too tight.               | Adjust blades until they almost touch side walls of drum. |

| TABLE 13. ELECTRIC MOTOR TROUBLESHOOTING |                                |                                      |
|--|--------------------------------|--------------------------------------|
| SYMPTOM                                  | POSSIBLE PROBLEM               | SOLUTION                             |
|  | No voltage to motor?           | Check power source.                  |
| Blades will not rotate.                  | Defective extension cord?      | Replace extension cord.              |
| blades will not rotate.                  | Defective motor ON/OFF switch? | Replace switch.                      |
|  | Defective motor windings?      | Repair windings or replace windings. |

# STOW MS-70 MIXER — WIRING DIAGRAM (ELECTRIC MOTOR)

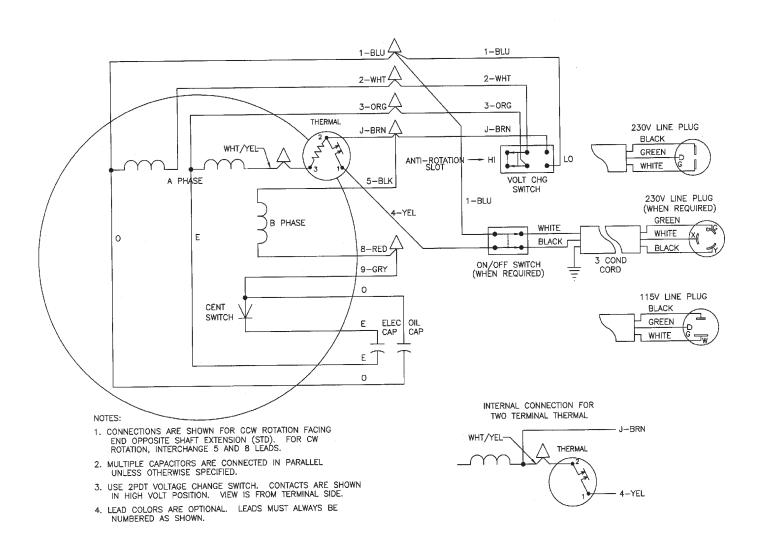


Figure 24. Electric Motor Wiring Diagram

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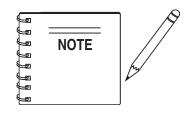
### **EXPLANATION OF CODE IN REMARKS COLUMN**

How to read the marks and remarks used in this parts book.

#### Items Found In the "Remarks" Column

Serial Numbers-Where indicated, this indicates a serial number range (inclusive) where a particular part is used.

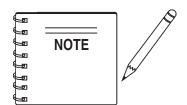
Model Number-Where indicated, this shows that the corresponding part is utilized only with this specific model number or model number variant.



The contents of this parts catalog are subject to change without notice.

#### Items Found In the "Items Number" Column

All parts with same symbol in the number column,  $\star$ , #, +, %, or >, belong to the same assembly or kit.

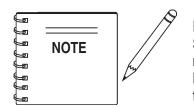


If more than one of the same reference number is listed, the last one listed indicates newest (or latest) part available.

### STOW MS-70 MIXER — SUGGESTED SPARE PARTS

# MS-70P/S PLASTER AND MORTAR MIXER 1 TO 3 UNITS WITH HONDA GX160K1HX2 AND GX240K1HA2 ENGINES

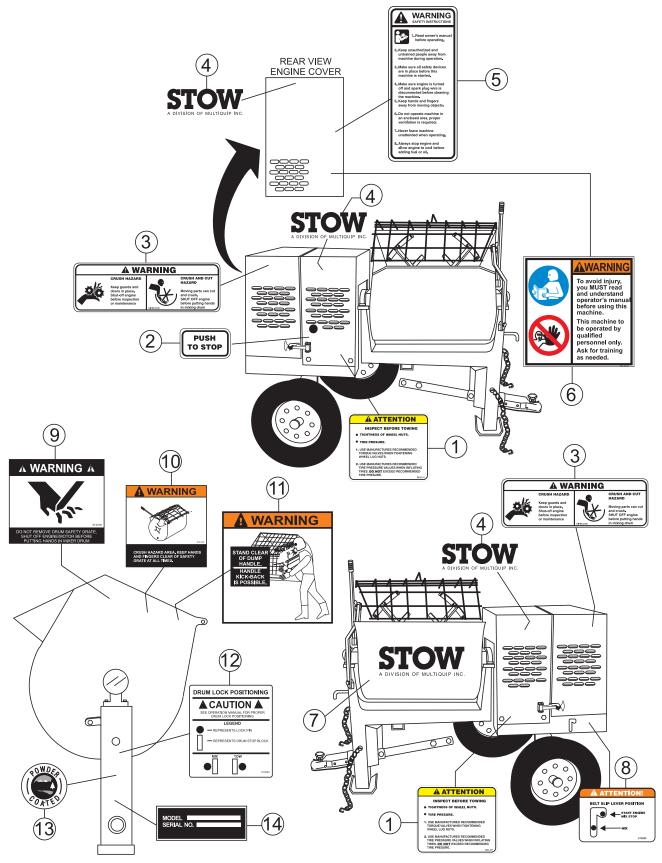
| Qty P/N       | Description                    |
|---------------|--------------------------------|
| 6 07055-034   | V-BELT A34 HONDA ENGINE        |
| 6 491112      | V-BELT A40 ELECTRIC MOTOR      |
| 2 EM914288    | OIL SEAL, AXLE                 |
| 4 EM903113    | BEARING, CONE, AXLE            |
| 4 EM903112    | BEARING, CUP, AXLE             |
| 2 20654-001   | SEAL, PADDLE SHAFT (BLACK)     |
| 2 530029      | RING, RETENTION                |
| 2 20104-002   | SEAL, SHAFT URETHANE (YELLOW)  |
| 3 17210ZE2515 | ELEMENT, AIR CLEANER, DUAL     |
| 3 9807956846  | SPARK PLUG, BPR6ES, NGK        |
| 3 9807956855  | SPARK PLUG, W20EPR-U, DENSO    |
| 1 28462ZE2W11 | ROPE, RECOIL STARTER           |
| 1 17620ZH7023 | CAP, FUEL TANK                 |
| 2 EM203010    | KIT, WIPER BLADES (STEEL DRUM) |



Part numbers on this Suggested Spare Parts List may supercede/replace the P/ N's shown in the test pages of this manual.

### STOW MS-70 MIXER — NAMEPLATE AND DECALS

#### NAMEPLATE AND DECALS



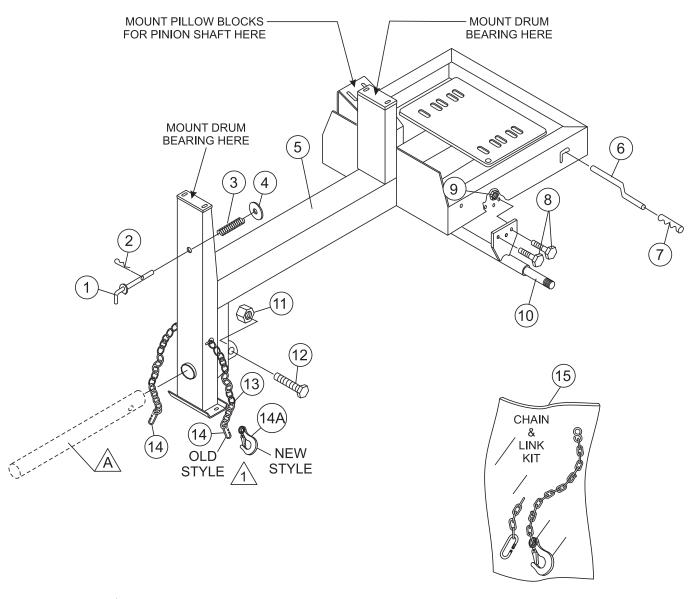
# STOW MS-70 MIXER — NAMEPLATE AND DECALS

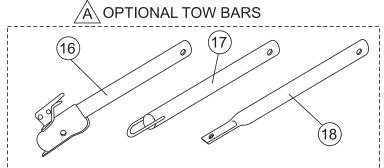
### NAMEPLATE AND DECALS

| NO | PART NO   | PART NAME                         | QTY. | <u>REMARKS</u>      |
|----|-----------|-----------------------------------|------|---------------------|
| 1  | DCL151    | DECAL, TOWING INSTRUCTIONS        | 2    |                     |
| 2  | EM948630  | DECAL, PUSH TO STOP               | 1    |                     |
| 3  | CIPDCL160 | DECAL, CRUSH WARNING              | 2    |                     |
| 4  | 515275    | DECAL, STOW LOGO (SMALL)          | 3    |                     |
| 5  | 504713    | DECAL, SAFETY INSTRUCTIONS        | 1    |                     |
| 6  | 35137     | DECAL, WARNING READ               | 1    |                     |
| 7  | 512527    | DECAL, STOW LOGO (LARGE)          | 3    |                     |
| 8  | 513523    | DECAL, BELT SLIP                  | 1    |                     |
| 9  | 513479    | DECAL, WARNING SAFETY GRATE       | 1    |                     |
| 10 | DCL335    | DECAL, CRUSH WARNING SAFETY GRATE | 1    |                     |
| 11 | DCL280    | DECAL, WARNING DUMP HANDLE        | 1    |                     |
| 12 | 513522    | DECAL, DRUM LOCK                  | 1    |                     |
| 13 | 13118     | DECAL, POWDER COATED              | 1    |                     |
| 14 |           | NAMEPLATE                         | 1    | CONTACT PARTS DEPT. |

SEE OPERATION AND SAFETY DECALS PAGE.

#### FRAME ASSY.





Quantity of item 14, Connector Link, changed from 2 to 1 in January 2006. Item 14A, Clevis Safety Hook, replaces discontinued Connector Link.

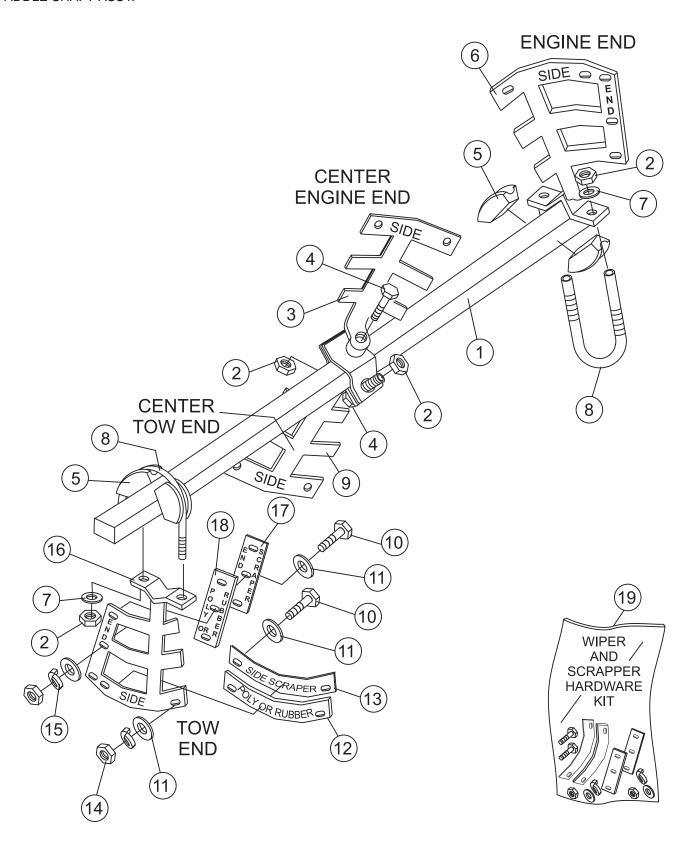
# STOW MS-70 MIXER — FRAME ASSY.

### FRAME ASSY.

| NO.  | PART NO.  | PART NAME            | QTY. | <u>REMARKS</u>      |
|------|-----------|----------------------|------|---------------------|
| 1    | 514842    | LOCK, PIN            | 1    |                     |
| 2    | 491692    | COTTER PIN           | 1    |                     |
| 3    | 530023    | SPRING LOCKING PIN   | 1    |                     |
| 4    | 507444    | WASHER, FLAT 3/4"    | 1    |                     |
| 5    | 514834    | MAIN FRAME           | 1    |                     |
| 6    | 530013    | CLUTCH HANDLE LEVER  | 1    |                     |
| 7    | 20278-001 | CLUTCH HANDLE GRIP   | 1    |                     |
| 8    | EM963692  | BOLT 1/2" UNC 1-1/2" | 6    |                     |
| 9    | 492584    | NUT, LOCK 1/2"       | 6    |                     |
| 10   | 514802    | AXLE, UNIVERSAL      | 1    |                     |
| 11   | 10176     | LOCK NUT 1/2" NC     | 1    |                     |
| 12   | EM124     | BOLT 1/2"-13 X 4 G5  | 1    |                     |
| 13*  |           | SAFETY CHAIN         | 1    |                     |
| 14*  | 01004     | CONNECTOR LINK       | 2    | BEFORE JANUARY 2006 |
| 14*  | 01004     | CONNECTOR LINK       | 1    | AFTER JANUARY 2006  |
| 14A* | 516580    | CLEVIS SAFETY HOOK   | 1    | AFTER JANUARY 2006  |
| 15   | 13363KIT  | CHAIN AND LINK KIT   | 1    | INCLUDES ITEMS W/*  |
| 16   | HBC-1     | BALL HITCH 2-INCH    | 1    | CONTACT UNIT SALES  |
| 17   | HLC-1     | LOOP HITCH           | 1    | CONTACT UNIT SALES  |
| 18   | HPC-1     | PIN HITCH 1-INCH     | 1    | CONTACT UNIT SALES  |

### STOW MS-70 MIXER — PADDLE SHAFT ASSY.

PADDLE SHAFT ASSY.



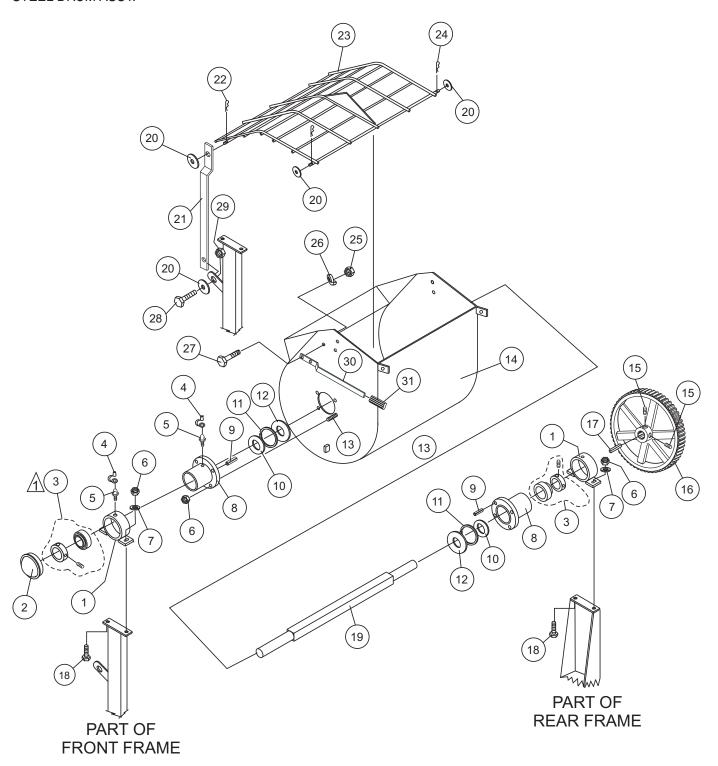
### STOW MS-70 MIXER — PADDLE SHAFT ASSY.

### PADDLE SHAFT ASSY.

| NO. | PART NO. | PART NAME                       | QTY. | <u>REMARKS</u>     |
|-----|----------|---------------------------------|------|--------------------|
| 1   | 514752   | PADDLE SHAFT                    | 1    |                    |
| 2   | 492584   | NUT, LOCK 1/2"                  | 6    |                    |
| 3   | EM202896 | PADDLE ARM, CENTER ENGINE END   | 1    |                    |
| 4   | 510721   | B0LT, 1/2 " X 6" G5             | 2    |                    |
| 5   | EM200292 | INSERT, PADDLE ARM              | 4    |                    |
| 6   | EM202898 | PADDLE ARM, ENGINE END          | 1    |                    |
| 7   | 504322   | WASHER, FLAT 1/2"               | 6    |                    |
| 8   | EM200297 | U-BOLT, END PADDLES             | 2    |                    |
| 9   | EM202897 | PADDLE ARM, CENTER TOW END      | 1    |                    |
| 10* | 492367   | SCREW, HHC 5/16-18 X 1-3/4 G5   | 14   |                    |
| 11* | EM923023 | WASHER, FLAT 5/16"              | 28   |                    |
| 12* | EM202929 | BLADE, SIDE, RUBBER             | 4    |                    |
| 13* | EM202899 | BLADE, SIDE, SCRAPPER           | 4    |                    |
| 14* | 2105164  | NUT, HEX 5/16" NC G5            | 14   |                    |
| 15* | EM923343 | WASHER, LOCK 5/15"              | 14   |                    |
| 16  | EM202899 | PADDLE ARM, TOW END             | 1    |                    |
| 17* | EM202927 | BLADE ,SCRAPPER END             | 2    |                    |
| 18* | EM202926 | BLADE, RUBBER END               | 2    |                    |
| 19  | EM203010 | KIT, WIPERS, SCRAPPERS & HDWARE | 1    | INCLUDES ITEMS W/* |

### STOW MS-70 MIXER — STEEL DRUM ASSY.

#### STEEL DRUM ASSY.



#### NOTES:

SET SCREWS AND BEARING COLLAR ARE INCLUDED WITH BEARING AND CANNOT BE PURCHASED SEPARATELY.

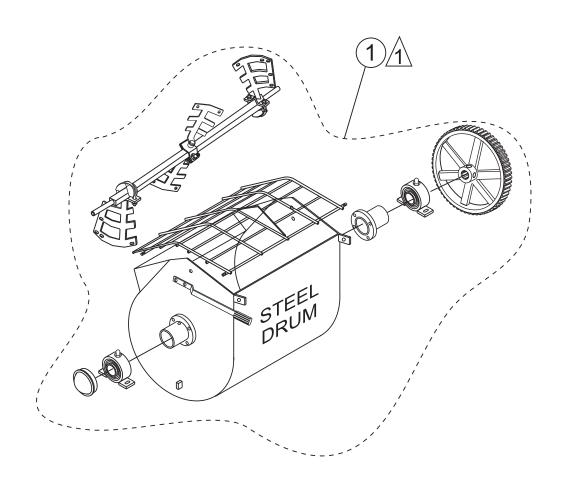
# STOW MS-70 MIXER — STEEL DRUM ASSY.

### STEEL DRUM ASSY.

| NO.<br>1<br>2<br>3 | PART NO.<br>530028Y<br>3249 | PART NAME DRUM BEARING BRACKET CAP, DUST BEARING SEALED | <b>QTY.</b> 2 1 | REMARKS                    |
|--------------------|-----------------------------|---|-----------------|----------------------------|
| S                  | 20561-001                   |   |                 | COLLAR CANNOT BE PURCHASED |
| 4                  | 491008                      | CAP, GREASE FITTING FITTING, GREASE NUT LOCK 3/8"       | 2               |                            |
| 5                  | EM916019                    | FITTING, GREASE   | 2               |                            |
| 6                  | EM969013                    | 1401, 2001 0/0  | 12              |                            |
| 7                  | 3019092                     | WASHER, FLAT 3/8"                                       | 4               |                            |
| 8                  | 514778Y                     |   | 2               |                            |
| 9                  | 513453                      | ROLL PIN 3/16" X 3/4"                                   | 2<br>2          |                            |
| 10                 | 20654-001                   |   | 2               |                            |
| 11                 | 530029                      | RING, RETENTION   | 2               |                            |
| 12                 | 20104-002                   |   | 2               |                            |
| 13                 | 504943                      | BOLT 3/8" NC X 2" G5                                    | 8               |                            |
| 14                 | 514749Y                     | ,   | 1               |                            |
| 15                 | EM961019                    |   | 2               |                            |
| 16                 | 530043                      | MAIN GEAR   | 1               |                            |
| 17                 | 501016                      | KEY, 3/8" X 88 MM                                       | 1               |                            |
| 18                 | 1/985-012                   | CARRIAGE BOLT 3/8-16 X 1-1/2"                           | 4               |                            |
| 19                 | 514752                      | SHAFT, PADDLE   | 1               |                            |
| 20                 | 492600                      | WASHER, FLAT 1/2"                                       | 4               |                            |
| 21                 | 514986                      | LIFT BAR  | 1               |                            |
| 22                 | EM925191                    |   | 1               |                            |
| 23                 | 514962Y                     | GRATE   | 1               |                            |
| 24                 | 505070                      | PIN, COTTER   | 2<br>2          |                            |
| 25                 | 6109160                     | HEX NUT 1/2" G5   | 2               |                            |
| 26                 | 6109180                     | WASHER, LOCK 1/2"                                       | 2               |                            |
| 27                 | EM963692                    | BOLT 1/2" UNC 1-1/2"                                    | 2               |                            |
| 28                 | EM963102                    | CAPSCREW, HHCS 1/2" NC X 1-1/4"                         | 1               |                            |
| 29                 | 492584                      | NUT, LOCK1/2" NC  | 1               |                            |
| 30                 | EM201537Y                   | HANDLE DUMP   | 1               |                            |
| 31                 | 15081                       | GRIP, DUMP HANDLE                                       | 1               |                            |

### STOW MS-70 MIXER — DRUM & PADDLE SHAFT COMPLETE ASSY.

DRUM AND PADDLE SHAFT COMPLETE ASSY.



#### NOTES:

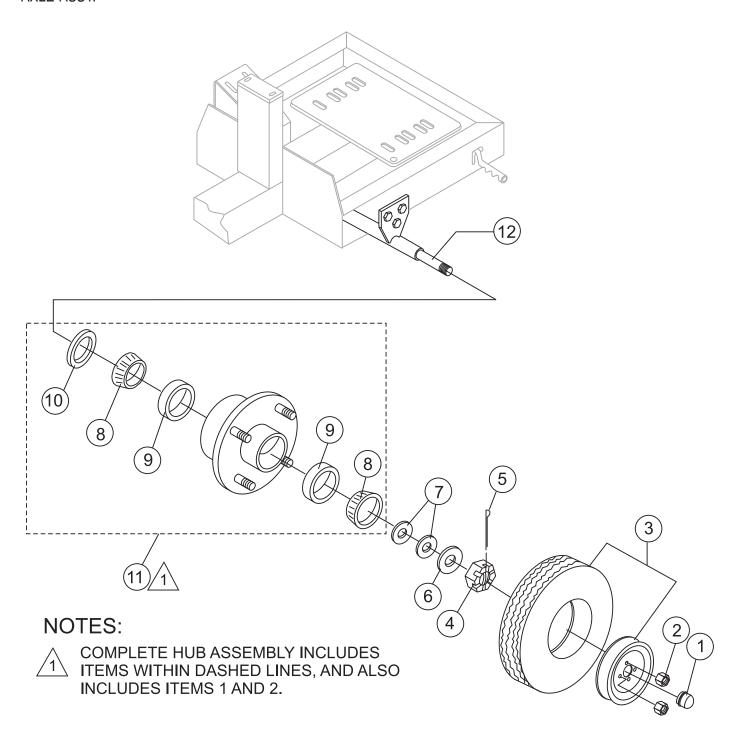
COMPLETE DRUM AND PADDLE SHAFT ASSEMBLIES ARE INCLUDED WITHIN DASHED LINES.

### STOW MS-70 MIXER — DRUM & PADDLE SHAFT COMPLETE ASSY.

DRUM AND PADDLE SHAFT COMPLETE ASSY.

|            |           | DART MANE                             | OTV    | DEMARKS.                     |
|------------|-----------|---------------------------------------|--------|------------------------------|
| <u>NO.</u> | PART NO.  | PART NAME                             | QTY.   | REMARKS                      |
| 1          | 516070    |                                       | 1      | INCLUDES ITEMS LISTED BELOW: |
|            | 530028Y   |                                       | 2      |                              |
|            | 3249      | CAP, DUST                             | 1      |                              |
|            | 20561-001 |                                       | 2      |                              |
|            | 491008    | CAP, GREASE FITTING                   | 2      |                              |
|            | EM916019  |                                       | 2      |                              |
|            | EM969013  | NUT, LOCK 3/8"                        | 12     |                              |
|            | 3019092   | WASHER, FLAT 3/8"                     | 4      |                              |
|            | 514778Y   | TRUNNION HUB                          | 2      |                              |
|            | 513453    | ROLL PIN 3/16" X 3/4"                 | 2<br>2 |                              |
|            | 20654-001 | SEAL, SHAFT (BLACK)                   | 2      |                              |
|            | 530029    | RING, RETENTION                       | 2      |                              |
|            | 20104-002 | SEAL, SHAFT URETHANE (YELLOW)         | 2      |                              |
|            | 504943    | BOLT 3/8" NC X 2" G5                  | 8      |                              |
|            | 514749Y   | DRUM, STEEL                           | 1      |                              |
|            | 492484    | •                                     | 2      |                              |
|            | 530043    |                                       | 1      |                              |
|            |           | KEY, 3/8" X 50 MM                     | 1      |                              |
|            |           | CAPSCREW HHCS 3/8 X 1-1/2"            | 4      |                              |
|            | 514752    | SHAFT, PADDLE                         | 1      |                              |
|            | 492600    | •                                     | 2      |                              |
|            | 514962Y   | ,                                     | 1      |                              |
|            | 505070    | PIN COTTER                            | 2      |                              |
|            | 492556    | HEX NUT 1/2" G5                       |        |                              |
|            | 6109180   |                                       | 2<br>2 |                              |
|            |           | · · · · · · · · · · · · · · · · · · · | 2      |                              |
|            | EM963692  |                                       |        |                              |
|            | EM201537Y |                                       | 1      |                              |
|            | 15081     | GRIP, DUMP HANDLE                     | 1      |                              |
|            | 514752    | PADDLE SHAFT                          | 1      |                              |
|            | 492584    | NUT, LOCK 1/2"                        | 6      |                              |
|            | EM202896  | PADDLE ARM, CENTER ENGINE END         | 1      |                              |
|            | 510721    | B0LT, 1/2 " X 6" G5                   | 2      |                              |
|            | EM200292  | INSERT, PADDLE ARM                    | 4      |                              |
|            | EM202898  | PADDLE ARM, ENGINE END                | 1      |                              |
|            | 504322    | WASHER, FLAT 1/2"                     | 6      |                              |
|            | EM200297  | U-BOLT, END PADDLES                   | 2      |                              |
|            | EM202897  | PADDLE ARM, CENTER TOW END            | 1      |                              |
|            | 492367    | SCREW, HHC 5/16-18 X 1-3/4 G5         | 14     |                              |
|            | EM923023  | WASHER, FLAT 5/16"                    | 28     |                              |
|            | EM202929  | BLADE, SIDE, RUBBER                   | 4      |                              |
|            | EM202899  | BLADE, SIDE, SCRAPPER                 | 4      |                              |
|            | 2105164   | NUT, HEX 5/16" NC G5                  | 14     |                              |
|            | EM923343  | WASHER, LOCK 5/15"                    | 14     |                              |
|            | EM202899  | PADDLE ARM, TOW END                   | 1      |                              |
|            | EM202927  | BLADE ,SCRAPPER END                   | 4      |                              |
|            | EM202926  | BLADE, RUBBER END                     | 4      |                              |
|            |           |                                       | 7      |                              |

### AXLE ASSY.

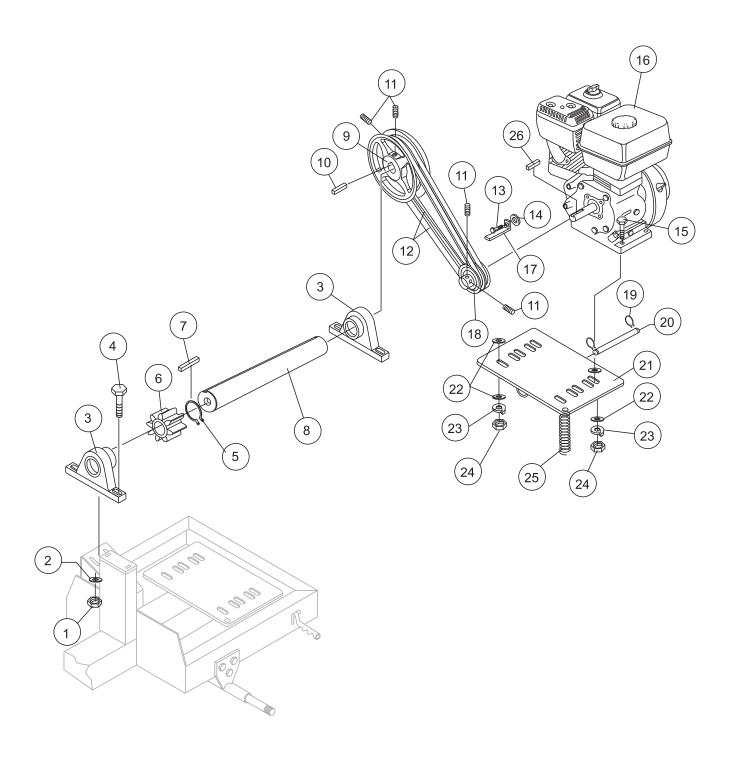


# STOW MS-70 MIXER — AXLE ASSY.

### AXLE ASSY.

| NO  | PART NO  | PART NAME                     | QTY. | REMARK               |
|-----|----------|-------------------------------|------|----------------------|
| 1#  | 3469     | DUST CAP                      | 2    |                      |
| 2#  | 8115     | LUG NUTS                      | 8    |                      |
| 3   | 3005     | TIRE AND RIM, CARLISE         | 2    |                      |
| 4   | 8164     | CASTLE NUT 1"                 | 2    |                      |
| 5   | 491688   | COTTER PIN 1/8" X 1-1/2'      | 2    |                      |
| 6   | EM511159 | WASHER, FLAT, .087" THICKNESS | 2    |                      |
| 7   | EM501299 | WASHER, FLAT, .135" THICKNESS | 1    |                      |
| 8#  | EM903113 | BEARING CONE                  | 4    |                      |
| 9#  | EM903012 | BEARING CUP                   | 4    |                      |
| 10# | EM914288 | OIL SEAL                      | 2    |                      |
| 11  | EM941306 | HUB ASSY., 4-BOLT             | 2    | . INCLUDES ITEMS W/# |
| 12  | 514802   | AXLE, UNIVERSAL               | 1    |                      |

### ENGINE ASSY.



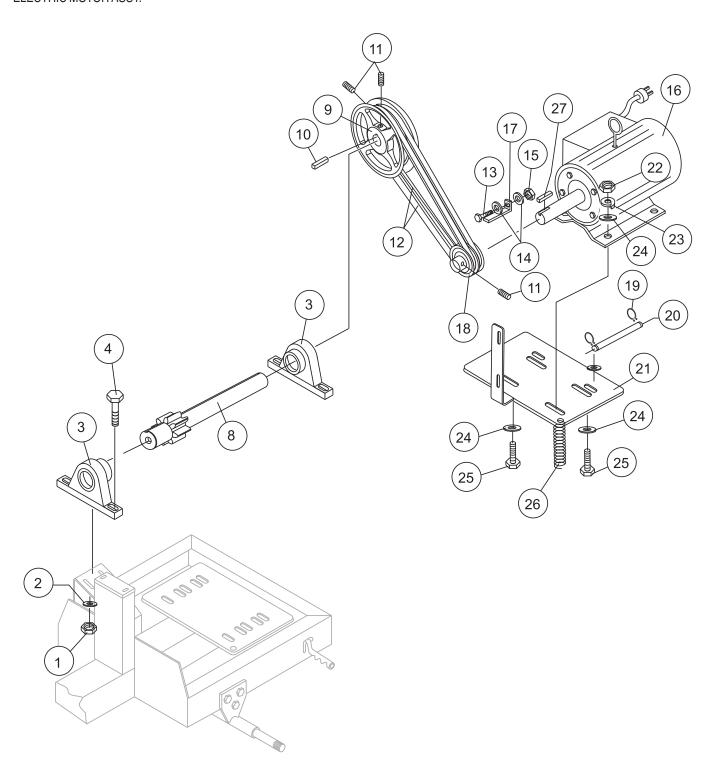
# STOW MS-70 MIXER — ENGINE ASSY.

### ENGINE ASSY.

| NO | PART NO     | PART NAME                 | QTY. | REMARKS |
|----|-------------|---------------------------|------|---------|
| 1  | 492583      | NUT 3/8" NC G5            | 4    | <u></u> |
| 2  | 506488      | FLAT WASHER 3/8           | 8    |         |
| 3  | EM905016    | PILLOW BLOCK BEARING      | 2    |         |
| 4  | 492378      | BOLT 3/8" NC X 1-3/4" G5  | 4    |         |
| 5  | 490957      | RING, RETAINER            | 1    |         |
| 6  | 513868      | PINION GEAR               | 1    |         |
| 7  | 500214      | KEY, 1/4" X 30 MM         | 1    |         |
| 8  | 502226      | PINION SHAFT              | 1    |         |
| 9  | 492077      | PULLEY (LARGE)            | 1    |         |
| 10 | 500275      | KEY, 1/4" X 40 MM         | 1    |         |
| 11 | 492467      | SET SCREW, 5/16' NC 3/8"  | 4    |         |
| 12 | 07055-034   | V-BELT, A-34              | 2    |         |
| 13 | 503117      | BOLT, 3/8" NC X 3" G5     | 1    |         |
| 14 | 508344      | WASHER, FLAT 5/16"        | 3    |         |
| 15 | 492378      | BOLT 3/8" NC X 1-3/4" G5  | 4    |         |
| 16 | GX240K1HA2  | · ·                       | 1    |         |
| 17 | 514985      | BELT RETAINER BAR         | 1    |         |
| 18 | 505205      | PULLEY, (SMALL)           | 1    |         |
| 19 | 604445      | RING, RETENTION           | 2    |         |
| 20 | 530454      |                           | 1    |         |
| 21 | 530019      | ENGINE MOUNTING PLATE     |      |         |
| 22 | 492597      | WASHER, FLAT 5/16"        | 6    |         |
| 22 | 492598      | WASHER, FLAT 3/8"         | 6    |         |
| 23 | 492623      | WASHER, LOCK 5/16"        | 4    |         |
| 23 | 492624      |                           | 4    |         |
| 24 | 492553      | NUT, HEX 5/16"            | 4    |         |
| 24 | 492554      | NUT, HEX 3/8"             | 4    |         |
| 25 |             | SPRING, EXTENSION         | 1    |         |
| 26 | 90745ZE2600 | SQ. KEY 6.3 X 6.3 X 43 MM | 1    |         |

### STOW MS-70 MIXER — ELECTRIC MOTOR ASSY.

#### ELECTRIC MOTOR ASSY.



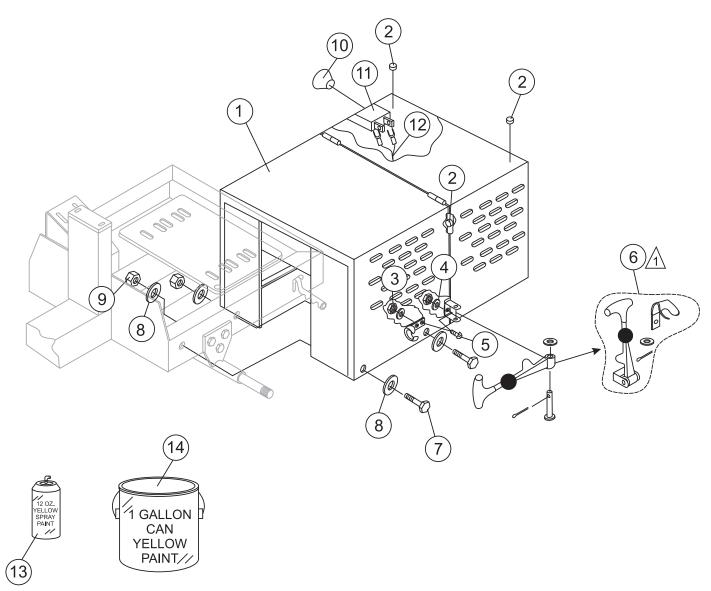
# STOW MS-70 MIXER — ELECTRIC MOTOR ASSY.

#### ELECTRIC MOTOR ASSY.

| NO | PART NO    | PART NAME                     | QTY. | <u>REMARKS</u> |
|----|------------|-------------------------------|------|----------------|
| 1  | 492583     | NUT 3/8" NC G5                | 4    |                |
| 2  | 506488     | FLAT WASHER 3/8               | 8    |                |
| 3  | EM905016   | PILLOW BLOCK BEARING          | 2    |                |
| 4  | 492378     | BOLT 3/8" NC X 1-3/4" G5      | 4    |                |
| 8  | 20216-001  | SHAFT AND PINION              | 1    |                |
| 9  | 20061-001  | PULLEY (LARGE)                | 1    |                |
| 10 | 505084     | KEY, 1/4" X 55 MM             | 1    |                |
| 11 | 492467     | SET SCREW, 5/16' NC 3/8"      | 3    |                |
| 12 | 491112     | V-BELT, A-40                  | 2    |                |
| 13 | 503117     | CAP SCREW 5/16"-18X 1"        | 1    |                |
| 14 | 492598     | WASHER, FLAT 3/8"             | 2    |                |
| 15 | 492582     | NUT, NYLON 5/16"-18           | 1    |                |
| 16 | 35L229S302 | ELECTRIC MOTOR 1.5 HP         | 1    |                |
| 17 | 514985     |                               | 1    |                |
| 18 | 502213     | PULLEY, (SMALL)               | 1    |                |
| 19 | 604445     | RING, RETENTION               | 2    |                |
| 20 | 530454     | SHAFT, ENGINE MOUNT           | 1    |                |
| 21 | 530089     | ELECTRIC MOTOR MOUNTING PLATE | 1    |                |
| 22 | 2105164    | NUT, HEX 5/16" NC             | 4    |                |
| 23 | 492623     | WASHER, LOCK 5/16"            | 4    |                |
| 24 | EM923023   | WASHER, FLAT 5/16"            | 8    |                |
| 25 | 492378     | BOLT 3/8" NC X 1-3/4" G5      | 4    |                |
| 26 | 530024     | SPRING, EXTENSION             | 1    |                |
| 27 | 500169     | KEY, 3/16" X 50 MM            | 1    |                |
| 27 | 500169     | ,                             | 1    |                |

# STOW MS-70 MIXER — CABINET ASSY.

#### CABINET ASSY.



#### NOTES:



COMPLETE LATCH ASSEMBLY
INCLUDES ITEMS WITHIN DASHED
LINES. ITEMS CANNOT BE PURCHASED
SEPARATELY.

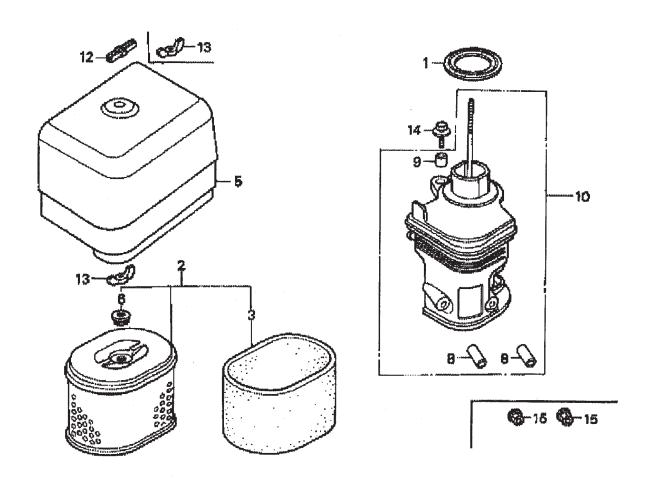
# STOW MS-70 MIXER — CABINET ASSY.

### CABINET ASSY.

| NO | PART NO   | PART NAME                       | QTY. | <u>REMARKS</u>        |
|----|-----------|---------------------------------|------|-----------------------|
| 1  | 515014    | CABINET, ENGINE W/DECALS        | 1    | INCLUDES ITEMS W/*    |
| 2  | 490202    | RUBBER PROTECTOR                | 4    |                       |
| 3  | 13287     | LOCK NUT 8-32                   | 6    | REPLACEMENT PART ONLY |
| 4  | 2203      | WASHER, FLAT #10                | 6    | REPLACEMENT PART ONLY |
| 5  | 1307      | SCREW RHMS 8-32 X 1/2"          | 6    | REPLACEMENT PART ONLY |
| 6* | 491010    | LATCH ASSY., COMPLETE           | 2    |                       |
| 7  | 492375    | BOLT 3/8" NC X 1" G5            | 4    |                       |
| 8  | 492598    | WASHER, FLAT 3/8"               | 4    |                       |
| 9  | 492583    | NUT 3/8" NC G5                  | 4    |                       |
| 10 | 29174-001 | KNOB, MUSHROOM                  | 1    |                       |
| 11 | 29173-001 | SWITCH, PUSH-PULL               | 1    |                       |
| 12 | 504135C   | WIRE HARNESS                    | 1    |                       |
| 13 | RAL1003S  | PAINT, SPRAY CAN 12 OZ., YELLOW | AR   |                       |
| 14 | RAL1003G  | PAINT, GALLON CAN, YELLOW       | AR   |                       |

# HONDA GX240K1HA2 ENGINE — AIR CLEANER ASSY.

AIR CLEANER ASSY.



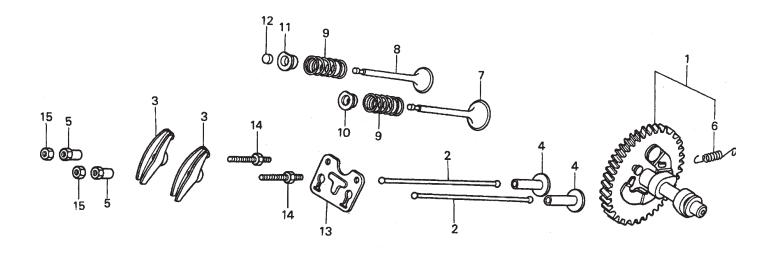
# HONDA GX240K1HA2 ENGINE — AIR CLEANER ASSY.

### AIR CLEANER ASSY.

| NO. | PART NO.    | PART NAME                  | QTY. | <u>REMARKS</u>    |
|-----|-------------|----------------------------|------|-------------------|
| 1   | 16271ZE2000 | GASKET, ELBOW              | 1    | INCLUDES ITEM W/* |
| 2   | 17210ZE2515 | ELEMENT, AIR CLEANER, DUAL | 1    |                   |
| 3 * | 17218ZE2505 | FILTER, OUTER              | 1    |                   |
| 5   | 17231ZH9820 | COVER, AIR CLEANER         | 1    |                   |
| 6   | 17232891000 | GROMMET, AIR CLEANER       | 1    |                   |
| 8#  | 17238ZE2310 | COLLAR, AIR CLEANER        | 2    |                   |
| 9#  | 17239ZE1000 | COLLAR B, AIR CLEANER      | 1    |                   |
| 10  | 17410ZE2020 | ELBOW COMP., AIR CLEANER   | 1    | INCLUDES ITEM W/# |
| 12  | 0037806000  | WINGNUT 6MM                | 1    |                   |
| 13  | 90325044000 | WINGNUT, TOOL BOX SETTING  | 2    |                   |
| 14  | 90009ZE2003 | BOLT- WASHER 6 X 22        | 1    |                   |
| 15  | 9405006000  | NUT, FLANGE 6MM            | 2    |                   |

# HONDA GX240K1HA2 ENGINE — CAMSHAFT ASSY.

CAMSHAFT ASSY.



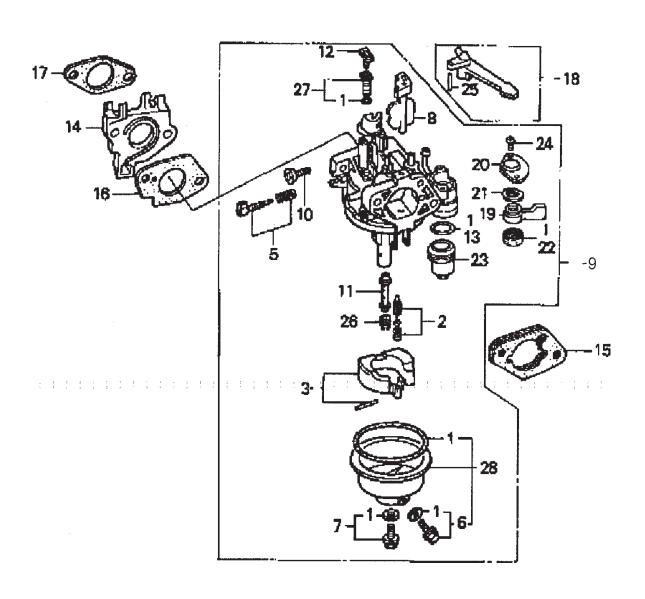
# HONDA GX240K1HA2 ENGINE — CAMSHAFT ASSY.

### CAMSHAFT ASSY.

| NO. | PART NO.    | PART NAME                  | QTY. | <b>REMARKS</b>    |
|-----|-------------|----------------------------|------|-------------------|
| 1   | 14100ZE2W01 | CAMSHAFT ASSY              | 1    | INCLUDES ITEM W/* |
| 1   | 14100ZE2306 | CAMSHAFT                   | 1    |                   |
| 2   | 14410ZE2013 | ROD PUSH                   | 2    |                   |
| 3   | 14431ZE2010 | ARM VALVE ROCKER           | 2    |                   |
| 4   | 14441ZE2000 | LIFTER VALVE               | 2    |                   |
| 5   | 14451ZE1013 | PIVOT ROCKER ARM           | 2    |                   |
| 6*  | 14568ZE1000 | SPRING, WEIGHT RETURN      | 1    |                   |
| 7   | 14711ZE2000 | VALVE, IN.                 | 1    |                   |
| 8   | 14721ZE2000 | VALVE, EX.                 | 1    |                   |
| 9   | 14751ZE2003 | SPRING, VALVE              | 2    |                   |
| 10  | 14771ZE2000 | RETAINER, IN. VALVE SPRING | 1    |                   |
| 11  | 14773ZE2000 | RETAINER, EX. VALVE SPRING | 1    |                   |
| 12  | 14781ZE2000 | ROTATOR, VALVE             | 1    |                   |
| 13  | 14791ZE2010 | PLATE, PUSH ROD GUIDE      | 1    |                   |
| 14  | 90012ZE0010 | BOLT, PIVOT 8MM            | 2    |                   |
| 15  | 90206ZE1000 | NUT, PIVOT ADJ.            | 2    |                   |

### HONDA GX240K1HA2 ENGINE — CARBURETOR ASSY.

CARBURETOR ASSY.

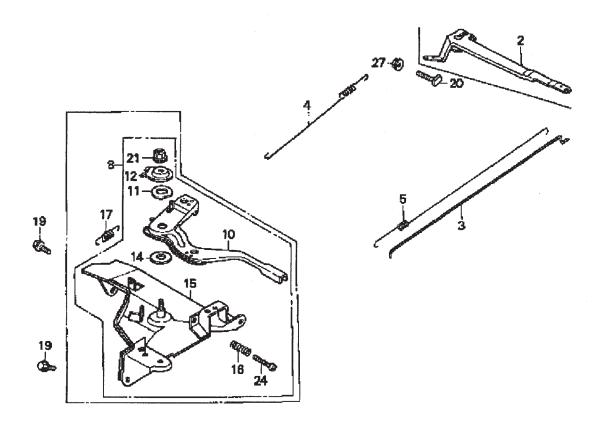


# HONDA GX240K1HA2 ENGINE — CARBURETOR ASSY.

### CARBURETOR ASSY.

| NO. | PART NO.     | PART NAME                | QTY. | <u>REMARKS</u>       |
|-----|--------------|--------------------------|------|----------------------|
| 1*+ | 16010ZE2812  | GASKET SET               | 1    |                      |
| 2*  | 16011ZA0931  | VALVE SET, FLOAT         | 1    |                      |
| 3*  | 16013ZA0931  | FLOAT SET                | 1    |                      |
| 5*  | 16016ZHW01   | SCREW SET                | 1    |                      |
| 6*+ | 16024ZE1811  | SCREW SET, DRAIN         | 1    |                      |
| 7*+ | 16028ZE0005  | SCREW SET B              | 1    |                      |
| 8*  | 16028ZE2005  | CHOKE SET                | 1    |                      |
| 9*  | 16100ZE2W71  | CARBURETOR ASSY          | 1    | . INCLUDES ITEMS W/* |
| 10* | 16124ZE0005  | SCREW, THROTTLE STOP     | 1    |                      |
| 11* | 16166ZE2W70  | NOZZLE, MAIN             | 1    |                      |
| 12* | 16075GHBB00  | COLLAR, SET              | 1    |                      |
| 13* | 16075GHBB00  | O-RING                   | 1    |                      |
| 14  | 16211ZE2000  | INSULATOR, CARB.         | 1    |                      |
| 15  | 16220ZA0702  | SPACER COMP., CARB.      | 1    |                      |
| 16  | 16221ZA0800  | GASKET, CARBURETOR       | 1    |                      |
| 17  | 16223ZA0800  | GASKET, INSULATOR        | 1    |                      |
| 18  | 16610ZE1000  | LEVER COMP., CHOKE, STD. | 1    |                      |
| 19* | 16953ZE1812  | LEVER, VALVE             | 1    |                      |
| 20* | 16954ZE1811  | PLATE, LEVER SETTING     | 1    |                      |
| 21* | 16956ZE1811  | SPRING, VALVE LEVER      | 1    |                      |
| 22* | 16957ZE1812  | GASKET, VALVE            | 1    |                      |
| 23* | 16967ZE0811  | CUP, FUEL STRAINER       | 1    |                      |
| 24* | 93500030060H | SCREW, PAN 3 X 6         | 2    |                      |
| 25  | 9430520122   | PIN, SPRING 2 X 12       | 1    |                      |
| 26* | 99101ZH70820 | JET, MAIN #82, OPTIONAL  | 1    |                      |
| 26* | 99101ZH70850 | JET, MAIN #85, OPTIONAL  | 1    |                      |
| 26* | 99101ZH80880 | JET, MAIN #88            | 1    |                      |
| 27* | 99204ZE20400 | JET SET, PILOT #40       | 1    |                      |
| 28* | 16015ZE8005  | CHAMBER SET, FLOAT       | 1    | . INCLUDES ITEMS W/+ |

CONTROL ASSY.



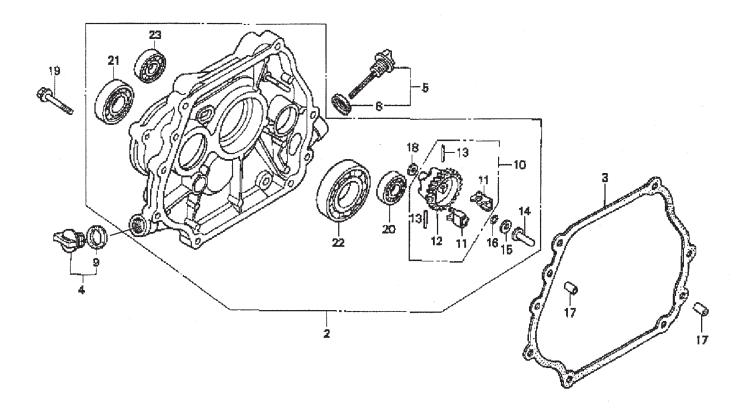
# HONDA GX240K1HA2 ENGINE — CONTROL ASSY.

### CONTROL ASSY.

| NO.         | PART NO.     | PART NAME                     | QTY. | <u>REMARKS</u>       |
|-------------|--------------|-------------------------------|------|----------------------|
| 2           | 16551ZE2000  | ARM, GOVERNOR                 | 1    |                      |
| 3           | 16555ZE2000  | ROD, GOVERNOR                 | 1    |                      |
| 4           | 16561ZE2000  | SPRING, GOVERNOR              | 1    |                      |
| 5           | 16571ZE2000  | SPRING, THROTTLE RETURN       | 1    |                      |
| 8           | 16570ZE2W00  | CONTROL ASSEMBLY              | 1    | . INCLUDES ITEMS W/* |
| 10*         | 16571ZE2W00  | LEVER, CONTROL                | 1    |                      |
| 11*         | 16574ZE1000  | SPRING, LEVER                 | 1    |                      |
| 12*         | 16575ZE2W00  | WASHER, CONTROL LEVER         | 1    |                      |
| 14 <b>*</b> | 16578ZE1000  | SPACER, CONTROL LEVER         | 1    |                      |
| 15 <b>*</b> | 16581ZE2W00  | BASE, CONTROL                 | 1    |                      |
| 16 <b>*</b> | 16584883300  | SPRING, CONTROL ADJUSTING     | 1    |                      |
| 19          | 90013883000  | BOLT, FLANGE (6 X 12) (CT200) | 2    |                      |
| 20          | 90015ZE5010  | BOLT, GOVERNOR ARM            | 1    |                      |
| 21*         | 90114SA0000  | NUT, SELF- LOCK (6MM)         | 1    |                      |
| 24*         | 93500050280A | SCREW, PAN (5 X 28)           | 1    |                      |
| 27          | 9405006000   | NUT, FLANGE                   | 1    |                      |

# HONDA GX240K1HA2 ENGINE — CRANKCASE COVER ASSY.

CRANKCASE COVER ASSY.



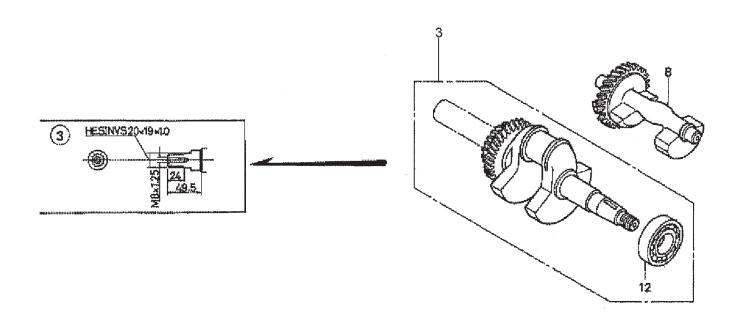
### HONDA GX240K1HA2 ENGINE — CRANKCASE COVER ASSY.

### CRANKCASE COVER ASSY.

| NO.  | PART NO.     | PART NAME                    | QTY. | REMARKS              |
|------|--------------|------------------------------|------|----------------------|
| 2    | 11400ZE2621  | COVER ASSY., CRANKCASE       | 1    | . INCLUDES ITEMS W/* |
|      |              | (H-TYPE) (BALANCER)          |      |                      |
| 3    | 11381ZE2801  | GASKET, CASE COVER           | 1    |                      |
| 4    | 15600ZG4003  | CAP ASSY., OIL FILLER        | 1    | . INCLUDES ITEMS W/# |
| 5    | 15600735003  | CAP ASSY., OIL FILLER        |      |                      |
| 8%   | 15625ZE1003  | GASKET, OIL FILLER CAP       | 1    |                      |
| 9#   | 15625ZE1003  | GASKET, OIL FILLER CAP       | 1    |                      |
| 10   | 16510ZE2811  | GOVERNOR ASSEMBLY (BALANCER) | 1    | . INCLUDES ITEMS W/+ |
| 11*+ | 16511ZE2000  | WEIGHT, GOVERNOR             | 2    |                      |
| 12*+ | 16512ZE2811  | HOLDER, GOVERNOR WEIGHT      | 1    |                      |
| 13*+ | 16513ZE2000  | PIN, GOVERNOR WEIGHT         | 2    |                      |
| 14*  | 16531ZE2000  | SLIDER, GOVERNOR             | 1    |                      |
| 15*  | 90473147000  | WASHER (6 X 16)              | 1    |                      |
| 16*  | 90602ZE1000  | CLIP, GOVERNOR HOLDER        | 1    |                      |
| 17   | 90701HC4000  | PIN, DOWEL (8 X 12)          | 2    |                      |
| 18*  | 58176        | WASHER, PLAIN (6MM)          | 1    |                      |
| 19   | 957010803500 | BOLT, FLANGE (8 X 35)        | 7    |                      |
| 20*  | 961006202000 | BEARING, RADIAL BALL (6202)  | 1    |                      |
| 21*  | 961006204000 | BEARING, RADIAL BALL (6204)  | 1    |                      |
| 22*  | 961006206000 | BEARING, RADIAL BALL (6206)  | 1    |                      |
| 23*  | 961006302000 | BEARING, RADIAL BALL (6302)  | 1    |                      |

# HONDA GX240K1HA2ENGINE — CRANKSHAFT ASSY.

CRANKSHAFT ASSY.



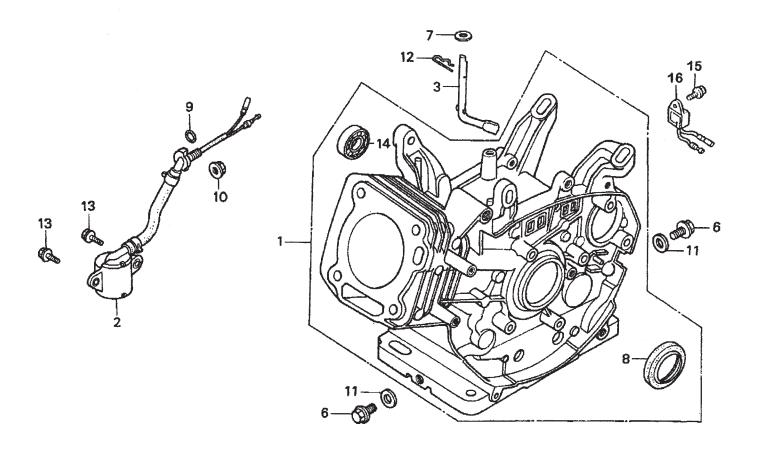
# HONDA GX240K1HA2ENGINE — CRANKSHAFT ASSY.

### CRANKSHAFT ASSY.

| NO. | PART NO.     | PART NAME                   | QTY. | <u>REMARKS</u>      |
|-----|--------------|-----------------------------|------|---------------------|
| 3   | 13320ZE2611  | CRANKSHAFT (L-TYPE)         | 1    | . INCLUDES ITEM W/* |
| 8   | 13351ZE2010  | WEIGHT BALANCER             | 1    |                     |
| 12* | 961006206000 | BEARING, RADIAL BALL (6206) | 1    |                     |

# HONDA GX240K1HA2 ENGINE — CYLINDER BARREL ASSY.

CYLINDER BARREL ASSY.



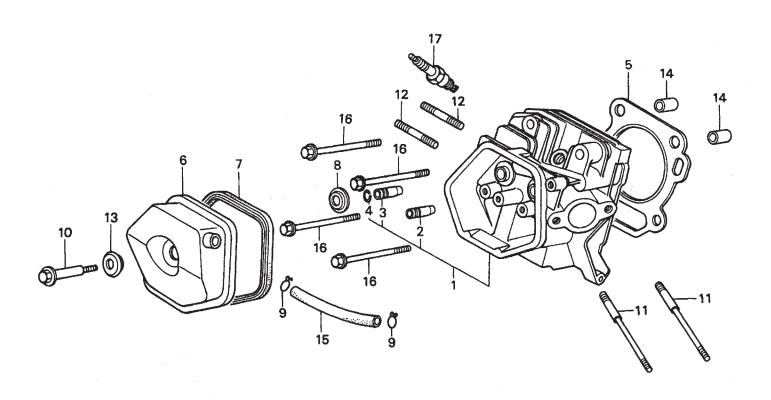
### HONDA GX240K1HA2 ENGINE — CYLINDER BARREL ASSY.

### CYLINDER BARREL ASSY.

| NO. | PART NO.     | PART NAME                        | QTY.    | <u>REMARKS</u>     |
|-----|--------------|----------------------------------|---------|--------------------|
| 1   | 12000ZE2834  | CYLINDER ASSY., BALANCER + OIL A | ALERT 1 | INCLUDES ITEMS W/* |
| 2   | 15510ZE2043  | SWITCH ASSY., OIL LEVEL          | 1       |                    |
| 3   | 16541ZE2010  | SHAFT, GOVERNOR ARM              | 1       |                    |
| 6   | 90131896650  | BOLT, DRAIN PLUG                 | 2       |                    |
| 7   | 90446KE1000  | WASHER 8.2 X17X0.8               | 1       |                    |
| 8*  | 91201890003  | OIL SEAL 30X46X8                 | 1       |                    |
| 9   | 91353671003  | O-RING 14MM ARAI                 | 1       |                    |
| 10  | 9405010000   | NUT FLANGE 10MM                  | 1       |                    |
| 11  | 031112230    | WASHER, DRAIN PLUG 12MM          | 2       |                    |
| 12  | 9425110000   | PIN, LOCK 10MM                   | 1       |                    |
| 13  | 957010601200 | BOLT, FLANGE 6X12                | 2       |                    |
| 14* | 961006202000 | BEARING, RADIAL BALL 6202        | 1       |                    |
| 15  | 90013883000  | BOLT, FLANGE 6X12 CT200          | 1       |                    |
| 16  | 34150ZH7003  | ALERT UNIT, OIL                  | 1       |                    |

### HONDA GX240K1HA2 ENGINE — CYLINDER HEAD ASSY.

CYLINDER HEAD ASSY.



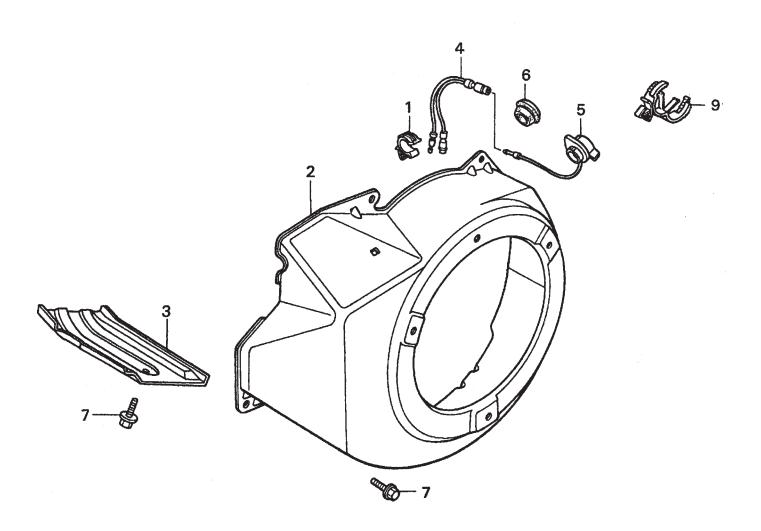
# HONDA GX240K1HA2 ENGINE — CYLINDER HEAD ASSY.

## CYLINDER HEAD ASSY.

| NO.        | PART NO.      | PART NAME                         | QTY. | <u>REMARKS</u>     |
|------------|---------------|-----------------------------------|------|--------------------|
| 1          | 12200ZH9000   | CYLINDER HEAD COMP                | 1    | INCLUDES ITEMS W/* |
| 2*         | 12204ZE2306   | GUIDE, VALVE, OS, OPTIONAL        | 1    |                    |
| 3*         | 12205ZE2305   | GUIDE, EX. VALVE, OS, OPTIONAL    | 1    |                    |
| <b>4</b> * | 12216ZE2300   | CLIP, VALVE GUIDE                 | 1    |                    |
| 5          | 12251ZE2800   | GASKET, CYLINDER HEAD             | 1    |                    |
| 6          | 12310ZE2020   | COVER COMP., HEAD                 | 1    |                    |
| 7          | 12391ZE2020   | GASKET, CYLINDER HEAD COVER       | 1    |                    |
| 8          | 14775ZE2010   | SEAT, VALVE SPRING                | 1    |                    |
| 10         | 90014ZE2000   | BOLT, HEAD COVER                  | 1    |                    |
| 11         | 90042ZE2000   | BOLT, STUD 8X123                  | 2    |                    |
| 12         | 92900080320E  | BOLT, STUD 8X47                   | 2    |                    |
| 13         | 90441ZE2010   | WASHER COMP., HEAD COVER          | 1    |                    |
| 14         | 9430112200    | PIN A, DOWEL 12X20                | 2    |                    |
| 15         | 950051100130M | BULK HOSE, VACUUM 11X1000, 11X100 | 1    |                    |
| 16         | 957011008000  | BOLT, FLANGE 10X80                | 4    |                    |
| 17         | 9807956846    | SPARK PLUG, BPR6ES, NGK           | 1    |                    |
| 17         | 9807956855    | SPARK PLUG, W20EPR-U, DENSO       | 1    |                    |

# HONDA GX240K1HA2 ENGINE — FAN COVER ASSY.

FAN COVER ASSY.



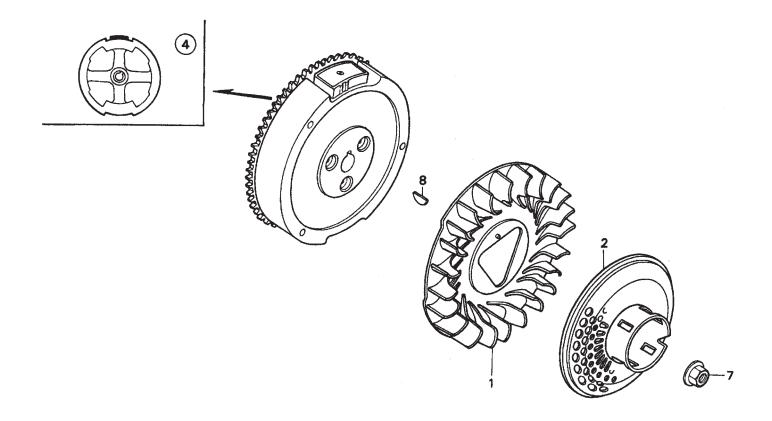
# HONDA GX240K1HA2 ENGINE — FAN COVER ASSY.

## FAN COVER ASSY.

| NO. | PART NO.      | PART NAME                    | QTY. | <b>REMARKS</b> |
|-----|---------------|------------------------------|------|----------------|
| 1   | 16731ZE2003   | CLIP, TUBE                   | 1    |                |
| 2   | 19610ZE2010ZC | COVER COMP., FAN *NH1* BLACK | 1    |                |
| 3   | 19631ZE2D00   | SHROUD                       | 1    |                |
| 4   | 32197ZH8003   | SUB-HARNESS                  | 1    |                |
| 5   | 36100ZE1015   | SWITCH ASSY., ENGINE STOP    | 1    |                |
| 7   | 90013883000   | BOLT, FLANGE 6X12, CT200     | 6    |                |
| 9   | 90684ZA0601   | CLIP, WIRE HARNESS           | 1    |                |

## HONDA GX240K1HA2 ENGINE — FLYWHEEL ASSY.

FLYWHEEL ASSY.



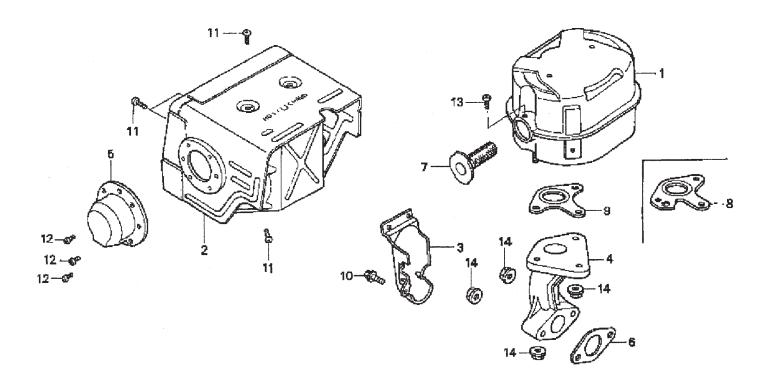
# HONDA GX240K1HA2 ENGINE — FLYWHEEL ASSY.

## FLYWHEEL ASSY.

| NO. | PART NO.    | PART NAME                          | QTY. | <b>REMARKS</b> |
|-----|-------------|------------------------------------|------|----------------|
| 1   | 19511ZE2000 | FAN, COOLING                       | 1    |                |
| 2   | 28450ZE2W11 | PULLEY COMP., STARTER, SCREEN GRID | 1    |                |
| 4   | 31100ZE2010 | FLYWHEEL COMP.                     | 1    |                |
| 7   | 90201ZE3V00 | NUT, SPECIAL 16MM                  | 1    |                |
| 8   | 90741ZE2000 | KEY, SPECIAL WOODRUFF 25X18        | 1    |                |

# HONDA GX240K1HA2 ENGINE — MUFFLER ASSY.

MUFFLER ASSY.

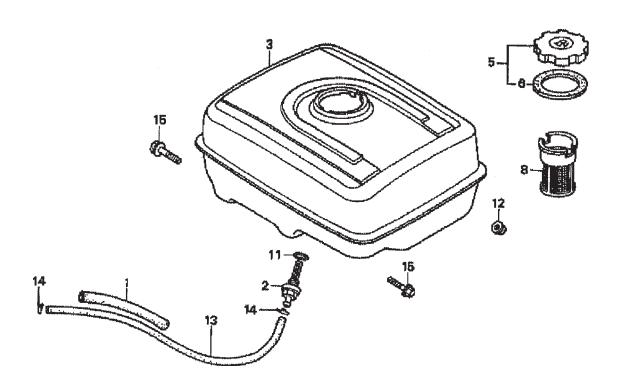


# HONDA GX240K1HA2 ENGINE — MUFFLER ASSY.

## MUFFLER ASSY.

| NO. | PART NO.    | PART NAME                         | QTY. | <b>REMARKS</b> |
|-----|-------------|-----------------------------------|------|----------------|
| 1   | 18310ZE2W00 | MUFFLER                           | 1    |                |
| 2   | 18320ZE2W01 | PROTECTOR, MUFFLER                | 1    |                |
| 3   | 18323ZE2W00 | PROTECTOR, EX. PIPE               | 1    |                |
| 4   | 18330ZE2W00 | PIPE, EX.                         | 1    |                |
| 5   | 18331ZE2810 | CAP, MUFFLER                      | 1    |                |
| 6   | 18333ZK6Y00 | GASKET, EX. PIPE                  | 1    |                |
| 7   | 18355ZE2010 | ARRESTER, SPARK                   | 1    |                |
| 8   | 18381ZE2W10 | GASKET, MUFFLER (ARRESTER)        | 1    |                |
| 9   | 18381ZE2800 | GASKET, MUFFLER                   | 1    |                |
| 10  | 90013883000 | BOLT, FLANGE (6 X 12) (CT200)     | 1    |                |
| 11  | 90050ZE1000 | SCREW, TAPPING (5 X 8)            | 6    |                |
| 12  | 90055ZE1000 | SCREW, TAPPING (4 X 6)            | 3    |                |
| 13  | 90050ZE1000 | SCREW, TAPPING (5 X 8) (OPTIONAL) | 1    |                |
| 14  | 9405008000  | NUT, FLANGE (8MM)                 | 5    |                |

FUEL TANK ASSY.

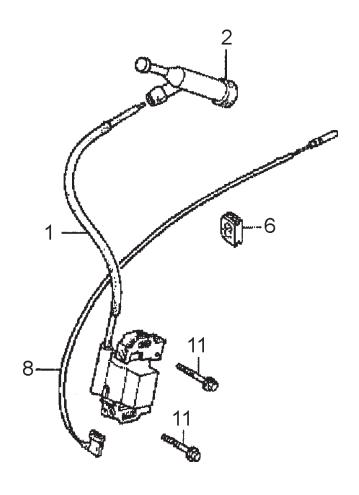


# HONDA GX240K1HA2 ENGINE — FUELTANK ASSY.

## FUEL TANK ASSY.

| NO. | PART NO.      | PART NAME                         | QTY. | <u>REMARKS</u>     |
|-----|---------------|-----------------------------------|------|--------------------|
| 1   | 16854ZH8000   | RUBBER SUPPORTER 107MM            | 1    |                    |
| 2   | 16955ZE1000   | JOINT, FUEL TANK                  | 1    |                    |
| 3   | 17510ZE2010ZD | TANK COMP., FUEL *NH1*, BLACK     | 1    |                    |
| 5   | 17620ZH7023   | CAP COMP., FUEL FILLER            | 1    | INCLUDES ITEMS W/* |
| 6*  | 17631ZH7003   | GASKET, FUEL FILLER CAP           | 1    |                    |
| 8   | 17672ZE2W01   | FILTER, FUEL                      | 1    |                    |
| 11  | 91353671003   | O-RING 14MM, ARAI                 | 1    |                    |
| 12  | 9405008000    | NUT, FLANGE 8MM                   | 2    |                    |
| 13  | 950014500360M | BULK HOSE, FUEL 4.5X3000, 4.5X222 | 1    |                    |
| 14  | 9500202080    | CLIP, TUBE, B8                    | 2    |                    |
| 15  | 957010802500  | BOLT, FLANGE 8X25                 | 2    |                    |

IGNITION COIL ASSY.



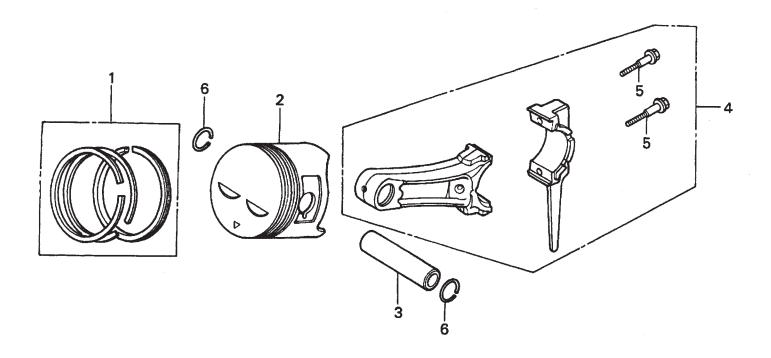
# HONDA GX240K1HA2 ENGINE — IGNITION ASSY.

## IGNITION COIL ASSY.

| NO. | PART NO.    | PART NAME                   | QTY. | <b>REMARKS</b> |
|-----|-------------|-----------------------------|------|----------------|
| 1   | 30500ZF6W02 | COIL ASSY., IGNITION        | 1    |                |
| 2   | 30700ZE1013 | CAP ASSY., NOISE SUPPRESSOR | 1    |                |
| 6   | 31512ZE2000 | GROMMET, WIRE               | 1    |                |
| 8   | 36101ZE1010 | WIRE, STOP SWITCH 370MM     | 1    |                |
| 11  | 90015883000 | BOLT, FLANGE 6X28           | 2    |                |

# HONDA GX240K1HA2 ENGINE — PISTON ASSY.

PISTON ASSY.



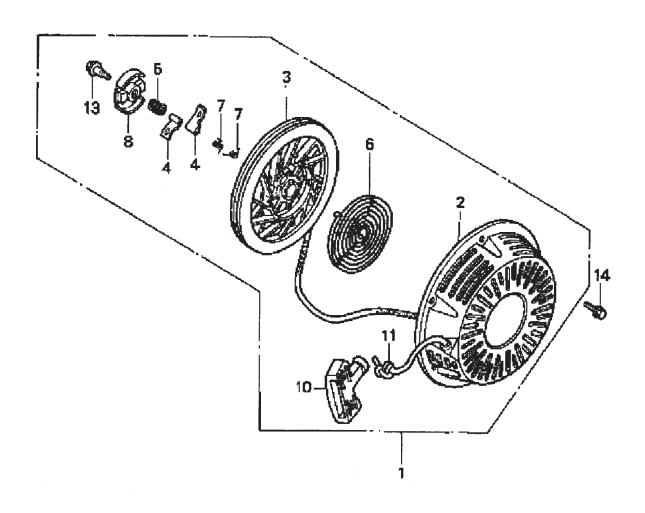
# HONDA GX240K1HA2 ENGINE — PISTON ASSY.

## PISTON ASSY.

| NO. | PART NO.    | PART NAME                            | QTY. | <b>REMARKS</b>     |
|-----|-------------|--------------------------------------|------|--------------------|
| 1   | 13010ZE2013 | RING SET, PISTON, STD.               | 1    |                    |
| 1   | 13011ZE2013 | RING SET, PISTON, OS 0.25, OPTIONAL  | 1    |                    |
| 1   | 13012ZE2013 | RING SET, PISTON, OS 0.50, OPTIONAL  | 1    |                    |
| 1   | 13013ZE2013 | RING SET, PISTON, 0.75, OPTIONAL     | 1    |                    |
| 2   | 13101ZE2W00 | PISTON, STANDARD                     | 1    |                    |
| 2   | 13102ZE2W00 | PISTON, OS 0.25, OPTIONAL            | 1    |                    |
| 2   | 13103ZE2W00 | PISTON, OS 0.50, OPTIONAL            | 1    |                    |
| 2   | 13104ZE2W00 | PISTON, 0.75, OPTIONAL               | 1    |                    |
| 3   | 13111ZE2000 | PIN, PISTON                          | 1    |                    |
| 4   | 13200ZE2000 | ROD ASSY., CONNECTING STANDARD       | 1    | INCLUDES ITEMS W/* |
| 4   | 13200ZE2305 | ROD ASSY., CONNECTING, US 0.25, OPT. | 1    |                    |
| 5*  | 90001ZE8000 | BOLT, CONNECTING ROD                 | 2    |                    |
| 6   | 90551ZE1000 | CLIP, PISTON PIN 18MM                | 2    |                    |

# HONDA GX240K1HA2 ENGINE — RECOIL STARTER ASSY.

RECOIL STARTER ASSY.



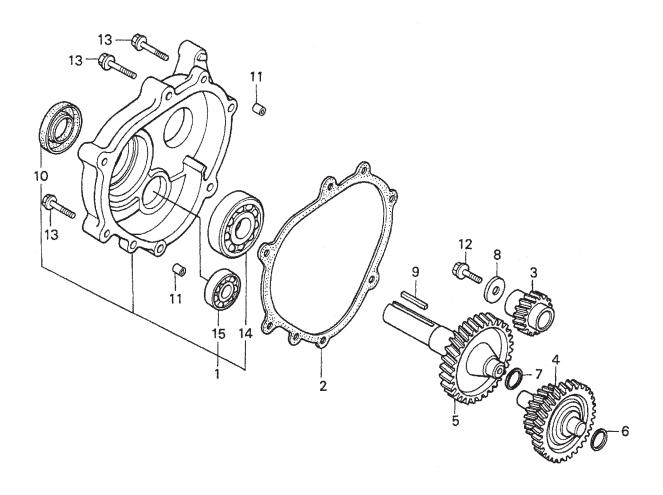
# HONDA GX240K1HA2 ENGINE — RECOIL STARTER ASSY.

## RECOIL STARTER ASSY.

| NO. | PART NO.      | PART NAME                             | QTY. | <u>REMARKS</u>     |
|-----|---------------|---------------------------------------|------|--------------------|
| 1   | 28400ZE2W01ZB | STARTER ASSY., RECOIL *NH1*, BLK      | 1    | INCLUDES ITEMS W/* |
| 2*  | 28410ZE2W01ZB | CASE COMP., RECOIL STARTER *NH1*, BLK | 1    |                    |
| 3*  | 28421ZE2W01   | PULLEY, RECOIL STARTER                | 1    |                    |
| 4*  | 28422ZE2W01   | RATCHET, STARTER                      | 2    |                    |
| 5*  | 28441ZE2W01   | SPRING, FRICTION                      | 1    |                    |
| 6*  | 28442ZE2W01   | SPRING, STARTER RETURN                | 1    |                    |
| 7*  | 28443ZE2W01   | SPRING RATCHET                        | 2    |                    |
| 8*  | 28444ZE2W01   | RETAINER, SPRING                      | 1    |                    |
| 10* | 28461ZE2W02   | GRIP, STARTER                         | 1    |                    |
| 11* | 28462ZE2W11   | ROPE, RECOIL STARTER                  | 1    |                    |
| 13* | 90004ZE2W01   | SCREW, CENTER                         | 1    |                    |
| 14  | 90008ZE2003   | BOLT, FLANGE 6X10                     | 3    |                    |

# HONDA GX240K1HA2 ENGINE — GEAR REDUCTION ASSY.

GEAR REDUCTION ASSY.

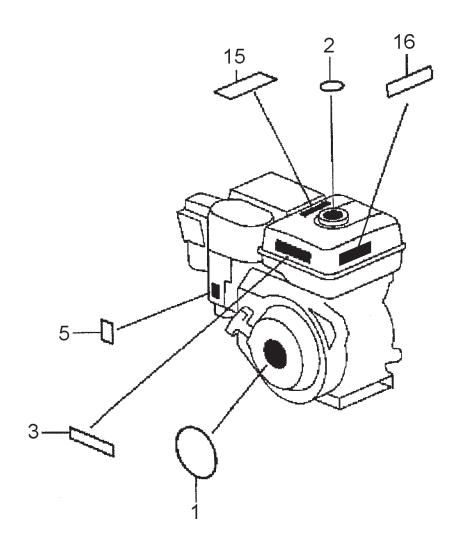


## HONDA GX240K1HA2 ENGINE — GEAR REDUCTION ASSY.

## GEAR REDUCTION ASSY.

| NO. | PART NO.     | PART NAME                   | QTY. | REMARKS              |
|-----|--------------|-----------------------------|------|----------------------|
| 1   | 11500ZE2620  | COVER ASSY, REDUCTION CASE  | 1    | . INCLUDES ITEMS W/* |
| 2   | 11521ZE2800  | GASKET, CHAIN CASE COVER    | 1    |                      |
| 3   | 22103ZE2620  | GEAR, PRIMARY DRIVE (17T)   | 1    |                      |
| 4   | 23220ZE2621  | COUNTERSHAFT                | 1    |                      |
| 5   | 23710ZE2621  | SHAFT, P.T.O. (H-TYPE)      | 1    |                      |
| 6   | 90401ZE2620  | SHIM A (OPTIONAL)           | AR   |                      |
| 7   | 90402ZE2620  | SHIM B (OPTIONAL)           | AR   |                      |
| 8   | 90473842000  | WASHER (8MM)                | 1    |                      |
| 9   | 90745ZE2600  | KEY (6.3 X 6.3 X 43)        | 1    |                      |
| 10* | 91201890003  | OIL SEAL (30 X 46 X 8)      | 1    |                      |
| 11  | 9430108140   | PIN A, DOWEL ( 8 X 14)      | 2    |                      |
| 12  | 957010802500 | BOLT, FLANGE (8 X 25)       | 1    |                      |
| 13  | 957010804000 | BOLT, FLANGE (8 X 40)       | 6    |                      |
| 14* | 961006206000 | BEARING, RADIAL BALL (6206) | 1    |                      |
| 15* | 961006302000 | BEARING, RADIAL BALL (6302) | 1    |                      |

LABEL ASSY.



# HONDA GX240K1HA2 ENGINE — LABEL ASSY.

## LABELS ASSY.

| NO. | PART NO.    | PART NAME               | QTY. | <b>REMARKS</b> |
|-----|-------------|-------------------------|------|----------------|
| 1   | 87521ZE2W01 | EMBLEM, INTERNAL        | 1    |                |
| 2   | 87522ZE1810 | MARK, CAUTION, EXTERNAL | 1    |                |
| 3   | 87522ZH9000 | LABEL, CAUTION          | 1    |                |
| 5   | 87528ZE2810 | MARK, CHOKE, EXTERNAL   | 1    |                |
| 15  | 87586ZH7W00 | LABEL, FUEL CAUTION     | 1    |                |
| 16  | 87532ZH8810 | MARK, OIL ALERT         | 1    |                |

## Effective: July 15, 2003 TERMS AND CONDITIONS OF SALE — PARTS

# STOW

A DIVISION OF MULTIQUIP INC

#### **PAYMENT TERMS**

Terms of payment for unit sales are 2% 15 days net 30 days from date of invoice unless otherwise specifically stated on our invoice. Parts invoices have terms of net 10 days. **Minimum parts billing is \$15.00 net**.

Applicable discounts will be computed on merchandise value only. Late charges will be assessed at prevailing rates. Cash discounts cannot be taken on current billings if any previously billed amounts are past due.

### **FREIGHT POLICY**

Freight policy is established to offer customers every advantage possible. Due to bulk freight ratings on some equipment and other shipping considerations, freight policies differ by equipment type. Actual back freight may be charged for shipments originating from other than specified FOB warehouses. See Freight Policy for details.

All STOW domestic sales are FOB nearest available designated MQ/STOW warehouse. Export orders are ex-works factory located in Carson, CA or Boise, ID.

Additions to orders already shipped cannot be accepted for freight minimums.

Should STOW elect to make partial shipments of an order originally complying with the "freight allowed" requirements, transportation charges will be absorbed by STOW on any subsequent shipment applying to that order.

All other orders will be shipped collect or prepaid with charges added to the invoice. STOW's responsibility ceases when a signed manifest has been obtained from the carrier, and any claim for shortage or damage must be settled between the consignee and the carrier.

Parts: FOB Carson, California or Boise, Idaho. See Freight Policy for details and additional discounts.

# **Terms and Conditions of Sale STOW Construction Equipment**

### **DROP SHIPMENTS**

STOW reserves the right to refuse Drop Shipments outside the normal service area of the purchasing dealer.

### FIELD WAREHOUSES

Field Warehouses are currently located in California, Georgia, Idaho, Iowa, and New Jersey

## SPECIAL EXPEDITING SERVICE

The higher of a \$35.00 surcharge or actual costs will be added to the invoice for special handling, including bus shipments, or in cases where STOW personnel must personally deliver the equipment or parts to the carrier.

## **RETURNED GOODS POLICY**

Return shipments may be accepted and credit allowed, subject to the following provisions.

- A Returned Material Authorization (RMA) must be approved by STOW prior to shipment. Approvals for returned goods must be with just cause and are at the sole discretion of STOW. A copy of the Authorization must accompany the shipment to the designated Warehouse.
- Parts being returned must be listed as currently supplied on the current parts list.
- 3. Parts must be in new and resalable condition in the original package, with part numbers clearly marked.
- Units and accessories must be current models in the latest price list and in new and resalable condition.
- 5. Special order items are not returnable for credit.
- Credit on returned parts and units will be issued at actual dealer net price at time of purchase less 15% restocking charge.
- All returned shipments are to be made to the STOW designated receiving point, freight prepaid at the sender's expense.

The sender will be notified of any material received that does not meet the above provisions. Such material will be held for 30 days from notification pending instructions. If a reply is not received within 30 days, the material will be returned to the sender at his expense with no credit issued.

## PRICING, REBATES AND SPECIFICATIONS

Every effort will be made to provide adequate notice of changes; however, prices and equipment specifications are subject to change without notice.

Price changes are effective on a specific date and all orders received on or after that date will be billed at the revised price.

Rebates for price reductions and added charges for price increases will not be made for stock in dealer inventory at the time of a price change.

STOW reserves the right to quote and sell direct to Government agencies and to Original Equipment Manufacturer accounts who use our products as integral parts of their own products.

### LIMITATION OF SELLER'S LIABILITY

STOW shall not be liable hereunder for damages in excess of the purchase price of the item with respect to which damages are claimed and in no event shall STOW be liable for loss of profit or good will or for any other special, consequential or incidental damages.

#### LIMITATION OF WARRANTIES

There are no warranties, express or implied, made by STOW. hereunder on Products manufactured or distributed by it except the warranty against defects in material and workmanship on new Products to the original purchaser, as set forth in the STOW New Product Limited Warranty.

STOW

A DIVISION OF MULTIQUIP INC.
Atlanta • Boise • Newark • Quebec, Canada
Manchester, UK • Rio de Janeiro, BR • Puebla, MX

## STOW CONSTRUCTION EQUIPMENT

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| NOTE PAGE |
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## **OPERATION AND PARTS MANUAL**

## **HERE'S HOW TO GET HELP**

PLEASE HAVE THE MODEL AND SERIAL NUMBER ON-HAND WHEN CALLING

## PARTS DEPARTMENT

800-427-1244 FAX: 800-672-7877 310-537-3700 FAX: 310-637-3284

## SERVICE DEPARTMENT

800-478-1244 FAX: 310-537-4259 310-537-3700

## TECHNICAL ASSISTANCE

800-478-1244 FAX: 310-631-5032

## WARRANTY DEPARTMENT

800-421-1244, EXT. 279 FAX: 310-537-1173 310-537-3700, EXT. 279

## SALES DEPARTMENT

310-661-4242 FAX: 310-604-9237 877-289-7869 (877-BUY-STOW)

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This manual must accompany the equipment at all times. This manual is considered a permanent part of the equipment and should remain with the unit if resold.

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